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OF THE

ASIATIC SOCIETY

OF

BENGAL.

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VOL. XIV.

PART I.—JANUARY TO JUNE, 1845.

Nos. 157 to 162.

NEW SERIES.

"It will flourish, if naturalists, chemists, antiquaries, philologers, and men of science, in different parts of Asia will commit their observations to writing, and send them to the Asiatic Society, in Calcutta; it will languish if such communications shall be long intermitted; and will die away if they shall entirely cease."—SIR WM. JONES.

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OF THE

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Notes on the Religion of the Sikhs, being a Notice of their Prayers, Holidays, and Shrines. By Major R. Leech, C.B., *Political Agent, N. W. F. From the Political Secretariat of the Government of India.*

The works of "Guroo Sobha" and "Bichitar Natak" have been consulted, and extracts made.

It will appear extraordinary that the Sikhs, who are forbid to worship at a Hindoo Mándar, should frequent Hindoo places of pilgrimage; but such is the case. Sikh pilgrims to the Ganges at Hurdwar have for many years past been increasing, and nothing is more probable than the Sikhs gradually re-adopting many more Hindoo observances.

Govind Singh prophesied that the Sikh's Derahs, or Shrines, would amount to 56,00,00,000.

Prayers.

The Sikh Japjee, composed by Guroo Nanak, answers to the Hindoo Gaitree repeated in the morning.

The Sikh Japjee, composed by Guroo Govind Singh, answers to the Hindoo Bisan Sahansar, (a morning prayer).

The Sikh Sukhmanee, composed by Guroo Nanak, answers to the Hindoo Geeta, (a morning prayer after ablution).

The Sikh Rouras, composed by Guroos Nanak and Govind, answers to the Hindoo Sandhija Tarpan, (a sunset prayer).

Lepers are cured by bathing in faith in the tank. A great number of lepers reside round the tank, and two or three are cured every year. If any one on going there fears to approach or touch these lepers, he becomes himself a leper. Many of them are rich, and trade; no customs or duties are levied on their goods.

Of the 6th Guroo, (Har Govind.)

Sree Govindpura; his Derah, the place of his death.

Of the 7th Guroo, (Har Ráe.)

1. Keertpur; his Derah, the place of his death, and also of his Mahal (wife). The tank in which he washed his feet is called, by the Sikhs, Charan Koulsar.

2. Bangah, in the Singpooria state; at Keertpur is the Derah of Baba Gurditta.

Of the 8th Guroo, (Har Krisen.)

1. Delhi; the place of his death, (by small-pox.)

Of the 9th Guroo, (Tegh Bahadur.)

1. Dehra, at Anandpoor; where his head was burnt on being brought by his Rangretas from Delhi.

2. Saifabad, in the Pateala territory; where the Raja has lately built a fort.

3. At Delhi, called Bangala; where he was killed.

4. Ditto; where his body was burnt. There is also at Delhi a shrine of Mata Sundaree, and another called Rakabganj.

5. At Benares.

Of the 10th Guroo, (Govind.)

1. Anandpoor; where there are seven Jhandas and Dehras.

1. Guroo Tegh Bahadur.

2. Kesgurh; where he converted five Sikhs, or rather initiated them and made them initiate him, and let their hair (kes) grow.

3. Mata Jeeto; the wife (Mahal) of Guroo Govind: she died here.

4. Damdama; the breathing-place, where he took breath and turned on his Musalman pursuers.

5. Holgurh; where he played the Holee.

6. Agampura ; from a vision revelation to Mata Jeeto there.

7. Manjee Sahat ; the cot on which she sat to receive salutations.

There is a melah or collection of pilgrims in the Holee.

2. Dehra of Guroo Govind at Bangah.

3. Jandpoor ; where he halted in his flight from Anandpoor.

4. Macheewara ; where his Musalman friends, Nubee and Ghunee Khans, saved his life, by disguising him.

5. Naknour ; five kos from Ambalah, where he fled from Macheewara.

6. Muktsar, in Malwah ; where he bathed and promised exemption from transmigration to all his followers who did the like in faith.

7. Damdama ; where he again took breath, and blest the place as learning-inspiring, calling it his Benares, where the greatest dunces should become scholars.

At the present day the best writers of the Gurmukhee character are at Damdama, which belongs to the Shaheed family.

8. Kapal Mochan, near Belaspoor. This is a great place of Hindoo pilgrimage.

9. Nanheree, near Ambalah.

10. Pa'unte Sahat, across the Ganges.

11. Patna ; where he was born.

12. Abjal Nagar ; where he died, (in the Deccan). There is a melah on the Buddee, 5th of Besak.

There is a Derah of Jeet Sing and Jazar Singh at Chamkour, where these sons of Guroo Govind were killed by the Musalmans.

The Derah of his two other sons, Fatteh Singh and Zorawar, is at Sarhind, where they were built alive into a wall by the Musalmans.

Sarhind is called by the Sikhs, Fattehgurh ; from Fatteh Singh being killed there. They also call it Phit moonhe (spit in the face,) and sometimes Ujar shahr, " the desolate city."

The Derah of Mata Guzaree is near that of her Shahzada, grandsons ; she fell down dead at the sight of the living wall. There is a melah during the Holee.

There is a shrine or Derah of Baba Sahat Singh, at Ambalah, who was a Bedee Sikh ; who is called by some the 11th Guroo, and is said to have caused the elevation of Ranjeet Singh by his blessing, and by giving him his sword : he died eleven or twelve years ago, from grief at

the death of his son, Baba Tegh Singh, which took place at his residence at Unnah.

At Daoon, there is the shrine of Baba Jwahar Singh Sodee.

At Gadgunga, there is the shrine of Uhadah Singh Sodee.

At Gadwal is the shrine of Guroo Ram Raee, where he died.

The offerings of these shrines are taken by the people who read the Grunth there, and offer prayers for the donors.

Notes, principally Geological, across the Peninsula of Southern India from Kistapatam, Lat. 14° 17′ *at the Embouchure of the Coileyroo River, on the Eastern Coast, to Honawer, Lat.* 14° 16′ *on the Western Coast, comprising a visit to the Falls of Gairsuppa. By* Captain Newbold, *F.R.S., M.N.I. Assistant Commissioner Kurnool, Madras Territory.*

Kistapatam. Kistapatam is the port of Nellore, from which it lies about 15 miles S. E. It is situated on the Coromandel Coast a short distance from the sea, and at little more than two miles North of the mouth of the Coileyroo or Condaleyroo river, in about Lat. 14° 17′. N. It stands at the edge of a low sandy flat which, though now dry and exposed, appears during the monsoon to be overflowed by the river freshes, and probably once formed a back-water or lagoon communicating with the sea to the N. near Toolypaliam, and with the embouchure of the river near another Toolypaliam to the South. Sea salt is here manufactured. The physical aspect of the adjacent country is that of a flat, sandy, maritime plain, broken near the sea by an irregular line, following the indentations of the Coast, of low dunes of fine sand, by which the travellers' bungalow on the S. bank of the river is surrounded. The sand a little N. of this abounds in granules of magnetic iron, some of which appear to be titaniferous. The understratum of the sand observed here, and in some wells a few miles to the South of the river proved to be greenish or bluish black clay, or tertiary clay of Coromandel, with pelagic shells similar to that underlying Madras, Pondicherry, and the alluvial plain of Masulipatam.

Marine Sand Dunes. The sand dunes near the river had a S. W. direction, and rose about 50 feet above its bed. The ripple marks

caused by the currents of air on their surface resemble those caused by currents of water, and the N. and S. direction of their major axis shows the Easterly and Westerly course of the late or existing prevalent winds. Their Eastern sides have a sloping direction; falling off rather abruptly to the West at about an angle of 45°, indicating that the wind which raised them blew *from* the E. On the surface were scattered here and there shells and fragments of shells blown up from the beach. The footsteps of waders, and other aquatic birds could be occasionally tracked where the wind had not again covered them up with loose sand.

These, together with the ripple marks, marine shells, and the elevation of these moving sands, form an interesting example of the manner in which strata of aqueous sub-marine origin may be imitated by the simple action of the wind on loose sand. Consolidation, and a more distinct stratification alone are wanting to convert these heaps into a fossiliferous ridge. The sand is often bound together by the long interlaced roots of grasses, &c.

Calorific action of sun's rays on surface of Sand Dunes. At 5 P. M. sky clear, slight breeze just perceptible; the thermometer placed on the sand and freely exposed to the sun's rays indicated a heat of 100° 3′. Simply suspended in the air, about 12 feet above the surface of the sand, equally exposed to the sun's rays, it stood at 78° 5′.

Nocturnal Radiation from surface of Sand Dunes. The radiating powers of the sand dunes are considerable. At 3 A. M., night nearly calm, sky clear, the thermometer shaded from radiation, and placed on a table about four feet from the ground, stood at 67°. Placed on the grass and freely exposed bulb thinly covered with a little white wool, it fell to 65.5°. But on the surface of the sand dunes it fell to 62°. The sand is fine and quartzy.

As ærial stillness is one of the conditions necessary to the full refrigerating effects of radiation, it is likely that on the coast, which is hardly ever free from currents, however slight, resulting from the regular alternations of the land and sea breezes, the differences of temperature obtained by radiation will hardly ever be so great as the table-lands of India. The lulls between the land and sea breezes perhaps present the most eligible times for such experiments.

The temperature of the water of the wells is not far from what may be the mean average temperature of the place, viz., from 80° 2′ to 81°.

The bed of the river near Kistapatam is apparently about 500 yards broad, and sandy. A bar of sand obstructs the mouth, against which the surf beats in white breakers. The Collector's bungalow stands on the N. bank of the river.

Nellore. Circumstances prevented my examining the tract between the sea at Kistapatam and Nellore; but as far as could be judged from rapidly passing over it, it resembles in flatness (sloping gently seawards) the rest of the maritime plains of the Coromandel Coast, and abounds with small tanks. At Nellore the usual granitic and hypogene rocks of this coast are covered by beds of laterite, which are seen in cliffs about 16 feet high fringing the Pennaur river. About three or four miles from Nellore, on the Northern bank of the river, quarries of the laterite occur at the village of Kohor, in a deposit of this rock about 20 feet thick near the tank. Both at Nellore and the surrounding villages, it is extensively employed as a building stone, and in other repairs of the roads. Blocks, about one foot thick and two long, are sold at the rate of 12 for the rupee. Small springs are seen oozing out at the bases of the laterite cliffs on the S. bank of the river at Nellore. These cliffs are divided by perpendicular and horizontal seams; the rock composing them is less quartzy than the Kohor laterite. In the vertical fissures I observed fragments of earthenware broken by the natives in coming for water. These bits of pottery often become impacted in a lateritic alluvial cement, which must not be mistaken, as has been the case, for the true laterite, and hence its origin ascribed to the recent or historic period. Some of the oldest pagodas and structures in South India are built on this rock. Both the laterites of Nellore and Kohor consist of a rock resembling the Malabar laterite, but containing more angular fragments of quartz. The surface of the laterite is often covered by a modern lateritic debris, more or less consolidated, which must not, as said before, be confounded with the true laterite.

As in the Beder laterite the water often passes from the surface of these cliffs by the tubular cavities in its structure which are enlarged, emptied of their clay and lithomarge, and modified by its passage downwards, until stopped in part by the clayey barrier it has assisted to accumulate. The water here forms reservoirs, and in overflowing finds its way out by fissures in springs. The bed of the Pennaur near Nellore is sandy. and apparently about 800 yards broad.

From Nellore by the North bank of the Pennaur to the base of the Eastern Ghauts.

Sungum. From Nellore by Kohor the laterite may be traced westerly to the vicinity of Dovoor, resting on the granitic and hypogene rocks about nineteen miles W.N.W. from Nellore. At the Sungum, or confluence of the Pennaur with the two small streams of the Bogheyroo and Berapeyroo, the first rocky elevation is seen since quitting the coast about twenty-nine miles distant, and nearly midway between the sea and the Eastern Ghauts. It appears as a short range abutting on the Pennaur river, and running N. by E. to about the distance of two miles. It is composed, at the village of the Sungum, of a massive quartz rock in indistinct stratification, cleft occasionally, like the laterite, by intersecting partings and vertical fissures which divide the rock into parallelograms. The planes of the former have a dip of about 5° towards the East: the vertical fissures run irregularly, but the greater part have a direction of N. by W. This quartzy rock passes from opaque and granular, to compact, translucent chert, of various shades of red, brown, green, and white. It contains disseminated scales of mica of a golden colour, which glitter like those in avanturine, and nests of brown iron ore.

If the marly horizontal partings are really the planes of stratification, it may be inferred from its conformability that this quartz rock does not belong to the hypogene series which is seen in highly inclined beds near its base, penetrated by veins of granite (as seen at Pollium, a village between Dovoor and Sungum,) but that it is an altered outlier of the sandstone mural crests which are seen from this on the Western horizon capping the granite and hypogene schists of the Eastern Ghauts.

A glimmering hornblende schist, and gneiss veined with granite, with a white mica replaced here and there by schorl, are found at the bases of the quartz hills of Sungum.

A cluster of Hindu temples, the principal of which is dedicated to Iswara, as at the holy Sungums (or confluences) of the Kistnah, Bhima, &c., surrounded by a lofty wall, crowns a rugged mass of this rock that projects from the main ridge into the sandy bed of the river, which at this season of the year presents a dreary waste of sand,

apparently marly, a mile in width, through which a slender crystal stream of water threads its way towards the sea. In front of the temple gates stands a granite slab, bearing a Sassanam, or inscription, in Nagri and Telugoo, almost buried in drifted sand. The emblems of eternity, (or rather durability)—the sun and moon—were engraven on the corners above the inscription. The priests of the temple are brahmans of the Smartal sect, whose Suami or bishop is the powerful Sencra Bharti. The remains of an old aqueduct are seen at a little distance from the Sungum. The village itself contains about 400 houses, though it appears formerly to have been a place of greater wealth: a few cotton cloths are manufactured here. The staple articles of cultivation are rice, baggi, or juari, and a little indigo.

Temperature of the Pennaur river. The temperature of the water in the Pennaur was 77.3°; of the springs 78.2° at 4 P. M. Temperature in open air at the time 82°.

From the Pennaur to Jummaveram and Copper district of Ganypenta. Leaving the North bank of the Pennaur at Sungum, the road lay in a N. by W. direction to Jummawdram, or Jummaveram, distant about ten miles from Sungum. The rocks here are still the hypogene schists, chiefly garnetiferous hornblende schist, and gneiss, with large veins of whitish quartz, the fragments of which are scattered over the uncultivated surface of the plain. The soil is reddish, both sandy and clayey, and rests either on a substratum of kunker and detritus of rock, or on the rock itself. Two out of the four wells at Jummaveram are saline.

The hypogene schists penetrated by trap and granite, extend from Jummaveram to Ganypenta or Gurumanipenta, a village about twenty-three miles N. N. W. from Jummaveram, about thirty-three miles North of the Pennaur about the same distance from the sea, and about twenty-eight miles from the base of the Eastern Ghauts.

This village is situated in the midst of the copper mining localities described in a paper published by the Royal Asiatic Society in their Journal.

From Ganypenta to the E. Ghauts. Proceeding from Gurumanipenta in a S. W. direction towards the entrance of the Dorenal Pass over the Eastern Ghauts, the surface of the great plain hitherto travelled over becomes more rugged and broken up by rocky elevations,

till at length the base of the Ghauts is reached near Udigherry. The hypogene schists, penetrated by granite and dykes of basaltic greenstone and overlaid by patches of kunker, continue up to the base of the Ghauts. Mica schist is seen at Samulraygudda, about four and a half miles E. S. E. from the town of Udigherry, and also about seven miles farther to the S. W. at Timmapolliam with quartz rock. Several of the hypogene spurs in the plain are capped with this quartz rock, which is usually of a light reddish colour passing into greenish grey, and white cherts. It is evidently altered sandstone. The hypogene schists are in great confusion at the base of the Ghauts, and in one place I observed the mica schist dipping at an angle of 41° to the W. *i. e.* towards the great line of dislocation. In some places they are but little inclined; in some vertical; while in others they appear to have been reversed, and folded back upon themselves, the upper parts of the flexures having disappeared in weathering or by denudation. Hence they have the appearance of alternating in a reversed order to that in which they usually occur, viz., the gneiss lowermost in the series. This occurs in most other hypogene areas of South India, and care should be taken to ascertain in such disturbed regions the true order of superposition from the horizontal or less inclined beds in the neighbouring districts less disturbed, and where there is no likelihood of inversion or folding back of the strata. These phenomena, though written in plainly legible characters on the faces of the gigantic escarpments of the Alps, must in Southern India generally be patiently traced out, letter by letter, amid the jungle and debris which usually obscure their features.

Eastern Ghauts. The Eastern Ghauts, in the vicinity of Udigherry, and the Dorenal Pass, have an altitude, approximatively obtained by a rough trigonometrical measurement, of about 700 feet from the maritime plain at their base, which is from 60 to 70 miles broad, its surface roughened by spurs from the Ghauts, and a few occasional rocky clusters and detached hills.

The Ghauts here have usually their escarpments, or steepest acclivities facing towards the East. The lower portions of the hills, which are composed of mica slate or gneiss, have usually a much less abrupt and steep descent than the sandstone, which often caps them in mural cliffs and hog-backed ridges. The line of junction of the two rocks

is thus often plainly visible in mountains many miles distant. The hypogene schists seldom attain a height of above 400 feet; the higher portions are sandstone. The sandstone, in the localities where I examined it on the heights overlooking the Dorenal Pass, had much the appearance of quartz rock passing into chert or hornstone, of various light shades of red, brown, green, blue, black and white.

Pass of Dorenal. This break in the Easternmost chain of the Eastern Ghauts is about four miles in length, general direction W. by N., and is evidently a transverse valley of fracture, passing nearly at right angles with the direction of the strata, and with that of the longitudinal vallies. The Northern side is abrupt and craggy, while the abrupt features of the Southern flank are more rounded and softened down. Its bottom has an irregular surface, occupied by angular rocky debris, the wreck of strata once continuous, and is now partially covered with both arboreous and shrubby vegetation. The ascent from the East, partaking of the general character of the Ghaut elevation, is steeper than the descent to the West; but it is every where passable for loaded carts, and is one of the best channels of commerce from the maritime plains of Nellore and Ongole to the more elevated districts of Cuddapah, Bellary and Kurnool. The best sort of cart adapted for this hill transit is that with the narrow sharp wooden wheels girt with strong iron fellies, and having axles revolving with the wheel. I saw about fifty return carts, laden with empty indigo boxes, returning from the town of Nellore to the indigo factory at Budwail in the Cuddapah district. Five hundred Lumbari bullocks, laden with salt, the manufacture of the coast, were jogging merrily on, to the music of their own bells, with this high-taxed necessary of life, into the interior.

Valley of Budwail. From the Pass of Dorenal the traveller descends by an easy slope into the longitudinal valley of Budwail, which is crossed in a W. N. W. direction to the Western and principal chain of the E. Ghauts. This fine valley has an almost S. direction inclining slightly to the E., and extends from the Kistnah beyond Cumbum on the N. to Tripety on the S. with some interruption from occasional cross lines of elevation and fracture, passing a little East of Sidhout to the cross fracture forming the valley of the Pennaur; whence its course may be traced southerly by the channels of Cheyeyroo and Goonjna streams, by Chitwail, Codoor, Baulpilly and Curcumbady.

On the line of the cross valley of the Pennaur near Sidhout a considerable subsidence, or sinking down of the surface, appears to have taken place; as near this point we see both the Northern and Southern lines of drainage of the longitudinal vallies of the E. Ghauts, viz. the Cheyeyroo, the Toomall and Sagglair, converge and empty themselves into the Pennaur, easterly through the cross fracture of Sidhout to the sea. The general breadth of the valley of Budwail North of the Pennaur, is about eleven miles. From Poormaumla on the N. to the Pennaur it is sub-divided into two vallies by a central range of hills, which passes by the town of Budwail; the lowest parts of these vallies are marked by the S. courses of the Toomall in that to the East, and by that of Sagglair in the valley to the W.

In the valley of Budwail the Cuddapah limestone with its associated argillaceous shales of different shades of red, chocolate, white, yellow and green, are first seen, the latter predominating. The central range consists chiefly of sandstone based on these shales, which are often denuded, and appear in the vallies between ridges capped with insulated massive layers of sandstone and quartz rock several miles asunder.

Westernmost ridge of the Eastern Ghauts. The Western, or principal ridge of the E. Ghauts is crossed by the Oothoomnagoo and Jungumrazpilly Passes. The latter is perfectly practicable for bandies. Leaving my baggage to go round by the Pass, I ascended the Ghauts by a sheep track, to the lead mines of Jungumanipenta, and descended to those of Buswapoor on the Western flank of the Ghauts. These mines have been previously described in a paper published by the Royal Asiatic Society. Suffice it here to observe, that the lower and modern elevations of the Ghauts are composed of slates and shales associated with the limestone; the highest ridges and peaks are capped and crested with sandstone passing into quartz rock. The limestone abounds with chert and hornstone; its shales are usually reddish, chocolate, green, white and ochreous, and interstratified with arenaceous, ferruginous, and calcareous bands passing into dark quartzose slates; petrographically speaking these resemble those of our Devonian series, but no traces of fossils are observed in any of these rocks.

Nundialempett. This village is situated about one and a quarter koss Westerly from the lead mines of Baswapur, and stands on the right bank

of a stream that flows from the neighbouring Ghauts southerly along their base into the Pennaur, called the Conda Nulla. On a ridge overlooking the tank stands the trigonometrical survey station of Mookandoo. The soil is alluvial and reddish, with calcareous matter intermixed, resting usually on a thick substratum of kunker imbedding nodular brown iron ore and fragments of the subjacent and adjacent rocks, viz. slaty argillaceous limestone and sandstone. The cultivation is solely of that description termed Moongari and garden. The aspect of the country at this western base of the Ghauts is at first undulating and picturesque, the undulations merging to the westward in the great *regur* plains of Dhoor and Cuddapah. The clumps and groves of shady tamarind trees, with which its surface is studded in the sub-ghaut plains, give it a park-like aspect. The ruins of a small fort, with the remains of a large cavalier in the centre, stand close to the village, and are said to have been built by one of the Cuddapah Nawabs.

Jummulmudgoo. Crossing the great plain of Dhoor, which is based on the diamond limestone, and divided by the Koond river, which runs Southerly down its centre to the Pennaur at Camlapoor, the large village of Jummulmudgoo is reached. It stands on the left bank of the Pennaur a little to the East of the emergence of this river from the gorge of the Gundicotta hills, which form the Western lip to the Pennaur basin, girt in on the South by the Wontimetta and Poolvaimla ranges, and to the East by the Eastern Ghauts, through which it escapes to the sea by the transverse break of Sidhout. The approximate height of this basin above the sea towards its centre, as indicated by the boiling point, is 800 feet.

The rock in the bed of the Pennaur and on which the village stands, is the blue variety of limestone above mentioned, often approaching French grey in lightness of colour ; it dips slightly towards the E. or N. of E. The village is rather noted for the brilliancy and permanency of its dyes, which are fixed by washing and steeping the cotton printed cloths in a saline well, the water of which rises up from the limestone in the heart of the village. The surface of the water was thirty-two and a half feet below that of the ground, owing to the dry season; its temperature three feet below the surface 73°, a lowness ascribable to the constant evaporation caused on the surface and sides

by the washing and the drying of cloths. Temperature of air in the shade at 5 P. M. 85°. The principal saline ingredient, if I may judge from the incrustations in the fissures and seams from which the water springs, is muriate of soda. Many of the seams are occupied by a greyish friable earth consisting of disintegrated limestone mingled with this saline residue left after evaporation of the water.

There is another brackish well in the town, but it does not answer the purpose of the native dyers so well as this. The water of the other well is perfectly sweet. One which I visited between the saline spring and the river, lies at the depth of twenty-three feet from the surface, with a temperature of 75°, six and a half feet below the surface. The time has now passed when the occurrence of common salt, the mineral chloride of sodium of chemists, in distant regions was held to be sufficient evidence of the existence there of the new red sandstone. It occurs in the oldest stratified rocks of America, in the coal measures of England, the lias of Switzerland, and all over the hypogene and granitic area of South India.

Jummulmudgoo contains about 3,000 inhabitants, the greater portion of whom are Kunbis speaking Telinghi, a language which continues from Nellore to about the vicinity of Gooty and Kurnool, where it meets the Canarese of the Western provinces, and near Beder on the N. W. with the Mahratta. I found that it meets with the Tamul of Madras and the Southern provinces at Sriharicotta, a village about fifty miles North of Madras, near the old limits of the Andra-des, or Telinghi country, and the Dravidame-des. Jummulmudgoo was formerly a place of some importance under the Annagundi or Bijanugger princes, and the Chetvail rajahs. It subsequently shared the same fate as the rest of their dominions South of the Tumbuddra. It is the burial place of Sidi Miyan, brother of Halim Khan, Nuwab of Cuddapah in Hyder's time. Funeral rites in memory of him were performed during my encampment here. The remains of the *Diwan-khanah* and palace of the Cuddapah rulers, and a small fort without a ditch, still exist.

Pass of Gundicotta. Previous to describing the defile through which the Pennaur flows Easterly from the plain of Tarputri into that of Cuddapah, it will be right to mention that the ridge, through

which this transverse fissure occurs, commences a few miles South of Kurnool, on the S. bank of the Tumbuddra on the N. W., and runs Southerly through Dhone, and the Eastern borders of Banganpilly and Gooty by Munimudgoo, whence the direction is S. Easterly by Owk, W. of Ollavaconda, Juggernatgooda, the Timnainpetta tank, and Jummulmudgoo, to the hamlet of Cullamulla, about thirteen miles S. E. from Jummulmudgoo, and about fifteen miles from the fissure of Gundicotta.

The direct breadth of the range where intersected by the fissure is about five miles, and its extreme height apparently not more than 600 feet; the extreme height of the precipices on either side, ascertained trigonometrically, is not more than 250 feet, and often not more than 80 feet. The general direction is E. by N., though in its course through the hills it describes two salient and two re-entering angles. The bottom of the fissure is flattish, and occupied completely by the sandy bed of the Pennaur. The breadth is usually from 100 to 300 paces.

In Hamilton's account, taken from Heyne, Rennell, &c., the Pass of Gundicotta is described as a break or chasm in the mountains, which "appears to have resulted from some violent concussion of nature, as it is very narrow, and the opposite sides almost perpendicular." Induced by this description to suppose that some interesting dislocation of the strata on a large scale had taken place, I examined narrowly the sides of the Pass. Entering it with the Pennaur from the West, from the wide sandy waste caused by the confluence of the Chittravutty river with the former stream, the sides of the opening present steep slopes of sandstones thinly covered with a sandy soil and scattered bushes, among which frolicked troops of gay monkies. About the middle of the Pass, under the walls of the fortress of Gundicotta, which crown the Southern cliffs, the sides are precipitous masses of sandstone divided by fissures into vertical pinnacles, assimilating ruins, and which are occasionally undermined by the force of the monsoon freshes and precipitated into the bed of the river.

The sandstone strata forming the precipices on each side exhibit no marks of dislocation or violent disturbance. They dip at an angle

rarely above 10° towards the East and N. of E., and the undisturbed dip of the beds can be traced from one side to the other.

No ledges supporting beds of rolled pebbles could be found on the faces of the cliffs, or other marks of the rocks having been worn by watery erosion down to the present channel.

It is therefore reasonable to infer that this singular fissure has been mainly occasioned by contraction of the mass during consolidation, and not by "a violent convulsion of nature or erosion;" although there is little doubt that its width has been since increased and shape modified by the washing of the river floods, as is evident from the precipitated debris from the sides which occasionally strew the bed. Smaller parallel fissures are observable in the cliffs on each side, one of which has formed the cave called by the native guides, "*Pandi Gawi.*"

The bed of the river is filled with sand and fragments of sandstone, and occasionally of its associated blue limestone, to so great a depth as to render an examination of the downward continuation of the fissure impracticable.

The great depression of the bottom of the fissure is clearly shown by the sudden manner in which the waters of the Pennaur are deflected into it from the S. E. course they were pursuing along the Western flank of the hills, and by the confluence of the Chittravutty at this point.

The river during the rains is said to rise to the height of seven or eight feet in the centre of the Pass.

The rock composing the cliffs is for the most part of a faint reddish, compact sandstone approaching quartz rock, in tabular masses of great thickness, though sometimes interstratified with argillaceous seams like the sandstones of Gokauk on the Gutpurba, which are usually of a reddish white and buffy colour.

The faces of the sandstone cliffs exhibit bands of a pale, green, red and white, which conform to the stratification.

The cliffs sustain a rocky table-land, the surface of which is frequently covered with a crust of laterite varying from a few inches to several feet in thickness, and which is also deposited in the fissures and seams of the subjacent sandstone.

The tabular surface of the latter rock, where denuded of this lateritic crust, is often divided into parallelograms by intersecting fissures and joints.

In some places nodular spheroidal concretions, about the size of a nutmeg, of quartz rock are seen imbedded in a mass of sandstone, around which the arenaceous particles of the rock are arranged in concentric bands of different shades, like those in agates. This concentric segregative structure is particularly observable in the more ferruginous portions of the rock.

Ripple marks are very common on the larger exposed surfaces of the sandstone strata. The table-land on the summit of the hills is a wild looking tract, covered with long grass and bush, which is burnt every year and produces good crops of turmeric.

Fortress of Gundicotta. The cliffs on the South of the Pass, and near its middle, are ascended at the ruins and tombs of Allahabad by a steep zigzag path to the once celebrated fortress begun by the Hindu sovereigns of Bijanugger, greatly enlarged by Aurungzebe's and Kuttub Shah's famous General, Mir Jumlah, and added to by Hyder and Tippoo.

After the fall of Bijanugger in 1564, the fort was still retained by Nursing Raj, nephew of the slain Hindu monarch Ram Raj, from whom it was taken after a severe siege by Mahomed Kuli Kuttub Shah, king of Golconda, or rather by his General Mir Jumlah. It was subsequently annexed to the Patan government of Cuddapah by Neknam Khan, and afterwards given up to Hyder when he reduced this part of the Balaghat. It was ceded to the British by the treaty with the Nizam in 1800. The fortifications are extensive, and contain a handsome Chuhar Minar, military magazine, and mosque, a small town, and the ruins of a temple to Mahadeo; to whose shrine Ferishta tells us 100,000 Hindus of Bijanugger used to make an annual pilgrimage and offer gifts of great value. Besides the two paths by Allahabad are the other approaches to the fort, viz. one by an easy ascent from Jummulmudgoo on the East, and the other from Chittywanripilly by a steep and rugged ascent just practicable for horses.

Figure-stone quarries of Reddadoor. Proceeding Westerly from the Pass of Gundicotta, I passed along the plain on the left bank of the Chittravutty river to the hill pagoda of Reddadoor, nearly eight miles W. by S. from the base of the Gundicotta hills. Limestone, passing into argillaceous shales and schists, constitutes the rock in the plain. The ridge of Reddadoor is about a mile in length, running in an E. by S. direction: it consists of argillaceous slates alternating with a finely lami-

nated fissile shale of various shades of brown, chocolate, red, and yellow passing into a pure white. These rocks have a distinctly jointed structure : the joints are nearly vertical running in a S. W. direction. The planes of stratification are inclined at an angle of from 10° to 15° dipping towards E. 10° N. ; they are easily distinguishable here from the smooth surfaces of cleavage by their dimpled and rippled superficies. The cleavage planes are also marked by dendritic delineations.

This ridge has been penetrated by a large dyke of basaltic greenstone, running nearly E. and W., and branching in a N. and S. direction. It is seen outcropping along the whole extent of the S. W. base. At the N. E. base both branches disappear in the plain. The basalt is also seen bursting through the strata at the saddle-shaped depression on the summit of the ridge, where it has both a globular and prismatic structure, the prisms pass into the globular form by the exfoliation of their angles, and I have even observed small spheroidal nuclei in the exfoliated coats, which are in turn subjected to concentric exfoliation. The dyke, like all others in this formation, does not overspread or cap the rocks on its sides, but ends abruptly at the surface. Towards the centre, like most volcanic dykes, it becomes crystalline and porphyritic, imbedding crystals of both whitish and pale green felspar with a few of hypersthene and foliated hornblende. Acicular augite is seen glistening in the more compact and quickest cooled parts of the dyke, and occasionally cubes of iron pyrites. The basalt melts easily into a greyish black glass.

The shale in contact, both in the plain and on the saddle of the ridge, is either hardened and rendered massive, compact or ferruginous, or is broken up, by crystalline forces apparently, into a number of laminæ often distinctly prismatic, and exhibiting dendritic marks on the planes into which they readily split. At the base of the hill the basalt and indurated shales assimilate so much at the junction line that it is difficult to distinguish them ; the shale has become dark and hornblendic, and the basalt has acquired something of the fissile structure of the shale. A similar phenomenon is observed in the metamorphism of the hypogene rocks of Southern India, where the granite near the point of contact acquires the structure of gneiss, and the gneiss becomes in turn more granular, massive or granitoidal. The phenomena presented by granite and basaltic greenstone at their contact with metamorphic or other stratified rocks are extremely interesting ;

and no country in the world, perhaps, affords better opportunities for their study than S. India. Some of the fissures of the dyke on the ridge of the hill are filled with calc spar, and many of the loose blocks encrusted with the same mineral and compact reddish kunker. Thin seams of nephrite occasionally intervene between the basalt and its walls; and the limestone associated with the slates has in some instances been converted into chert after assimilating calcedony in texture and colour.

Where basaltic greenstone and granite, or other plutonic rocks have extended on a great scale, we generally find not only a great tendency to crystalline and mineral development, but a segregation of the ordinary components of the rocks of the heated area, of such magnitude as to be at once apparent in the physical aspect of the country in large beds and ridges of quartz, iron ore, or quartz strongly impregnated with iron, felspathic clays, &c.

But to return. At the Southern base of the ridge the shales acquire a massive structure, and form a soft lilac tinted rock speckled with green, with a slightly soapy feel and easily sectile, which melts before the blow-pipe *per se* into a pearly glass. It is here quarried and carved into images, figures of deities, &c., which are exported.

I had a very neat representation of the Avatars of Vishnu, executed on a large slab of this material which, though I have given it the name of figure-stone, by no means resembles the agalmatolite of China, used for similar purposes.* Much of the water rising through the fissures of the rock around the base of the ridge is impregnated with muriate of soda; and further West to Ganlapaud the plain is intersected with trap dykes penetrating the grey limestone and its associated shales, which are often greatly altered and silicified. The general direction of the strata observed was E. S. E. and S. E. and dip N. of E. Hence, the plain to the base of the Rayelcherroo hills is chiefly limestone and associated shales and schists covered with *regur*. South of Rayelcherroo the limestone becomes of a waxy texture, compact, of a conchoidal fracture, veined and dotted with delicate shades of green, yellow, red, and imbeds pyrites. It rises into irregular hills and ridges, alternates with sandstone, and sandstone conglomerate. The hills become still more confused and jumbled, as the

* The Agalmatolite is wholly infusible. This is probably one of the many varieties of steatite.—Eds.

junction line with the granite is approached about six miles E. of Gooly, and the development of quartz is seen on the strange shaped peaks and mural ridges near the granite line. These hills, which form a most rugged and picturesque country, constitute the main and westernmost ridge of which the Gundicotta range just passed is a spur running down into the great plains of Tarputtri and Dhoor, and terminating abruptly as we have seen at Cullamulla, a few miles N. of the Travellers' bungalow at Chillumcoor.

These westernmost ridges instead of following the S. E. direction of the Gundicotta spur at the point of bifurcation between Banganpilly, Owk, Munimudgoo, and Piapully, continue their nearly N. and S. course from the banks of the Tumbuddra near Kurnool by Gooty to the vicinity of Anantapore in the Bellary district, whence they turn Easterly to the S. of Cuddapah, where they join the Eastern Ghauts; thus forming with the "impenetrable unsurveyed" spurs projecting westerly from the Eastern Ghauts along the S. bank of the Tumbuddra, to the North, the most complete basin perhaps in Southern India, embracing the great Regur plains of Cuddapah and Kurnool, and the beds of the Pennaur and its tributaries the Khoond and Chittravati. The Pennaur, which rises near Nundidroog, flowing Southerly from these watersheds of the elevated plateau of Mysore, is deflected suddenly by the great granitic outburst near Gooty from its farther course Northerly towards the Tumbuddra, which it would have certainly joined had not this rocky barrier compelled its stream to seek an Easterly course through the hilly edges and fertile plains of this sandstone-girt basin, to the Bay of Bengal. This basin and its rocky mountainous fringe, which consists chiefly of the diamond sandstone and limestone, comprehend the richest diamond mines of the former kingdom of Golconda, iron in great abundance, and the richest and almost only mines of galena in Southern India. It is composed for the most part of sandstone conglomerate, sandstone, arenaceous schists, limestone passing into silicious schists and into argillaceous schists, and shales of various shades, reddish brown, chocolate, and pale green prevailing. It was thought by Malcolmson, Heyne and others, that the formation consisted of the limestone underlying a sandstone and conglomerate imbedding the diamond. So far this is the case, but I have discovered on the Eastern limits from Juggernath S. of Kurnool to Gooty, and at Mudelaity

near Banganpilly, that beds of sandstone and sandstone conglomerate, reposing immediately on granite, underlie the limestone; and that the limestone must have been consolidated prior to the deposition upon it of the upper sandstone and its conglomerates, since in the latter I have found imbedded pebbles from the subjacent limestone. The formation, then, consists of an upper and lower sandstone and conglomerates, and the intervening limestone and associated shales.

Leaving this granite based chain, the great frontier plains of the Ceded Districts and Mysore are crossed to the hill fortresses of Raidroog, and Chittledroog, where we find magnificent outbursts of granite and other plutonic rocks, rising abruptly and irregularly from the nearly vertical hypogene schists which have suffered every variety of flexure and disturbance.

Chundergooty Droog. The granite, on which stands the Droog or hill fort of Chundergooty, rises into two lofty peaks, the steepest sides of which are nearly parallel to those of the Western Ghauts, sloping off towards the East and South. The joints in the lower ranges of laminar granite, or granitoidal gneiss, are divided by vertical fissures giving them much the appearance of vertical strata, as remarked by Christie in his paper on the Geology of the South Mahratta country. The Droog, it is said, was built in the time of the Pandion kings, and strengthened by Hyder. The village in the base consists of about fifty houses under a Killadar, with twenty men. Coffee is cultivated at Sindli, a village about a koss distance, and iron, obtained from mines at a short distance, is exported hence to the West coast.

From Chundergooty to Siddapore, the road for the latter part lies over the undulating and hilly tracts on the slopes of the Western Ghauts, which gradually become more and more covered with wood. Granite, and the hypogene rocks, intersected by dykes of basaltic greenstone and overlaid occasionally by patches of laterite, are the only rocks observed. About three koss distance from Siddapore lies the ancient and decayed town of Bilghy, formerly the capital of the Santavi-raya Rajahs. Siddapore is now the Kusbah town of the talook. It contains between 200 and 300 houses, inhabited chiefly by Lingayats speaking Canarese, Concanis, Haiga Brahmins and Mussulmans. The staple articles of cultivation are rice, betel-nut, cardamoms, and black pepper. The three last are exported chiefly to Mysore, the Ceded Dis-

tricts, and other parts of the interior; and to the native port of Kompta on the Western coast, passing down the Gairsuppa or Hossulmucki Ghaut and the Hoss Ghaut, on bullocks. Iron is procured in the neighbouring hills.

Ridge of the Western Ghauts. Between Siddapore and the Falls of Gairsuppa, the highest edge of the Ghaut ridge is crossed; the watersheds of the table-lands to the Eastward, and of the mountain-streams that rush in the monsoon with great violence down their precipitous sides and across the narrow strip at their base into the Indian sea.

The Warda was the last stream of any size observed flowing Easterly. The Ghauts descend to the Westward from this anticlinal axis by short and steepish declivities and irregular terraces. The surface rock is principally a quartzy lateritic conglomerate, overlying the hypogene schist, principally hornblende schist, gneiss, mica, chloritic, talcose, and actynolitic schists, which are occasionally seen basseting out. The more ferruginous of these schists disintegrate into a compact red clay, in which are seen veins of quartz continued from the subjacent rocks, still maintaining their slope and direction.

The soil is red and clayey, and in the rains greasy and slippery in the extreme, owing probably to the decayed talc and mica; garnets abound in it.

Physical aspect W. Ghauts. As the Ghauts are approached from the plateau of Mysore, the flat plains begin to undulate, rising all the time to the Westward, and as the traveller progresses the undulations become shorter and more perceptible, till the highest ridge of the Pass is attained. The height of the rocks on either side of the path is generally concealed by forest.

The nature of the vegetation that clothes the surface too suffers a manifest change, and becomes more profuse. In place of the clumps of mangoes and tamarind, which diversify the plains with their hedges and thickets of Aloe, Euphorbia, Cacti, Acacia, Cassia, Parkinsonia? we see graceful clumps of bamboo, the broad-leafed *Bilami*, Maræa Chinensis, the leaves and root of which are supposed to be specifics for snake-bites, and the *Dudol* yielding excellent timber. The Pulas (Butea Frondosa) with its brilliant orange-red flowers yielding a beautiful yellow dye known to the preparers of the coloured

balls used in the festival of the Hooli, and its broad thick leaves which serve the Hindu as plates and dishes, the laurel-leaved Gorui (Ixora parviflora) which furnishes torches for the traveller. The Mutti tree (Chuncoa Muttia) the ashes of which, particularly the bark, containing much potash, are used instead of chunam, by betel-chewers: the tree also affords good timber. Here and there a magnificent banyan throws down its hundred arms, and the sacred Peepul rears its verdant head; while further in the jungle grows the sandal, supplying the fragrant oil and wood for which this part of the Ghauts is famous. The Sissoo (Dalbergia,) and *Terminalia alata,* excellent timber trees; the hard and lofty teak itself, and the *Hopea decandria,* the wood of which is harder and more durable even than that of the teak; the sago and areca palms, the jack, and the cashew nut. The wild cinnamon (Cassia lignea) grows in great abundance near the Falls, and the underwood glowed with the beautiful blossoms of the scarlet Ixora, sacred to Siva and Krishnu, while the air was redolent with the fragrance of the wild jasmine.

The vegetation of the Ghauts strongly reminded me, in its regular and smooth bust-like outline, of that which clothes the lovely and ever verdant Malayan Islands to the water's edge, similar loranthaceous parasites festoon the loftier trees of the forest, and the jungles abound with Myrtaceæ and Laurineæ. The Ixoras and Eugenias are common to both, and the cultivated forest clearings yield abundant supplies of black pepper, cardamoms, areca, coffee, plantains, &c.

Falls of Gairsuppa. Accompanied by my friend, Lieut. White, 47th Regt., I arrived from Siddapore at the thatched bungalow of Korkunni, early in August, a little after midday. The bungalow stands in an open part of the forest, about one and a half mile from the Falls, the sound of which however did not yet reach us. Dripping with rain, our shoes full of blood from the jungle leeches that had fastened on our legs, and tolerably well fagged from a muddy march chiefly on foot over clayey and rocky ascents and descents, covered with dense thicket, we could not restrain our curiosity; but leaving our servants to prepare breakfast, with a guide trotting in front, we hastened towards the Falls along a narrow path winding through bush mixed with tall forest which clothes the banks of the *Sarawati,* for such is the name of the river that performs this stupendous lover's-leap

from the chains of the giant Ghauts into the arms of his ocean-rescued* Mistress—prolific Canara.

As we threaded the tortuous path, the rushing sounds of the rapids became clearly distinguishable from the shriller whistling of the wind, and the pattering of the rain among the leaves and branches of the trees.

On a nearer approach this rushing sound was suddenly drowned by the deep thunder, evidently of the Fall itself, which appeared to proceed from a great depth beneath the ground on which we walked, and which now was fairly felt to vibrate from the weighty shock. The air too became palpably colder, a phenomenon doubtless caused by the evaporation from the clouds of spray which canopy the Falls and adjacent banks.

Deceived by this sound, which still seemed afar off, into the imagination that the river was yet at a considerable distance, we unexpectedly emerged from the thicket upon the rapid immediately above the brink of the Falls, when the cause of this deception became evident; the din of the waters had been deadened by the peculiar shape, the immense depth, and confined dimensions of the chasm into which they were precipitated. Hence the ventrioloquism of the cataract.

We now stood silent and astounded by the roar and rush:—amid the grey clouds of mist and spray the arrowy waters of the rapid were visible, divided into a multitude of currents by the rock masses against which they tumultuously dashed in their impetuous progress to the edge of the precipice.

Here, as the eye and ear follow its course to the main Fall, the rapid literally dies a sudden death; its clamorous voice is abruptly silenced, and it bodily disappears, as if by magic, in the bowels of the earth, or into the region of moving mist which curtained the chasm from the place we were standing on.

After indulging a short time in this magnificent spectacle—a gem set in lovely mountain and forest scenery—we scrambled over the muddy and slippery shelves of rock towards the edge of the principal Fall. The river was much swollen by the monsoon, but had been still fuller, as shown by the bruised and shattered forest trees which had

* The Brahmins have a tradition, that the sub-ghautine maritime tracts of the Western Coast were raised from the ocean for their especial use.

been uprooted, borne down, and thrown in confusion with other vegetable debris on the rocks we had to cross.

Crawling on hands and knees—an operation rendered eligible by the then slimy surface of the rock and the painful effects of a score of tumbles—we contrived to reach the shelf of rock which completely projects over the margin of the chasm, and forms an admirable point of view. We lay down flat on the surface of this shelf, which slopes gently from the chasm, and drew ourselves up to its edge over which, as I stretched my head, a sight burst on the view, which I shall never forget, and can never hope to describe. I have since looked down the fuming and sulphurous craters of Etna and Vesuvius, but have never experienced the sensations which overwhelmed me in the first downward gaze into this (Hibernice,) volcano of waters:—for so it looks.

All thoughts of the picturesque, all pre-formed resolutions of subduing the exaggerated impressions likely to be produced on the imagination by such a scene, and reducing them by the sober checks of calculation of height, depth, velocity, bulk, &c.—at once vanished, and left the mind partaking in the tumultuous confusion and agitation going on. But it is the chaotic scene beneath that rivets with basilisk fascination the gaze of the spectator, and produces in some minds the dangerous impulse or desire of self-precipitation.

This impulse originates possibly in a sympathy existing between the *human* Mind and what is termed, perhaps inaccurately, "Inanimate Nature," which in its calm and beauteous state exercises so great a tranquilizing effect on certain minds.

Passive amid this activity, the spectator looks downwards into an apparently fathomless gulf of plunging waters, spray, uproar, and mist; first perhaps with a feeling of fear and giddiness, which rapidly vanishes, and the mind becomes not only reconciled to the incessancy and unvarying nature of these phenomena, but fascinated more or less by them. It was with great reluctance, and with an intense feeling of depression, that I withdrew my head drenched in spray from the brink of the precipice, to examine in detail other parts of the Falls. One might almost gaze for ever on this abyss in which a mighty mass of water appears eternally burying itself in a mist-shrouded grave. The clouds of spray which continually ascend heavenwards in slow and majestic wreaths, appear to typify the shadowy ghosts of the

entombed waters. The principal or Horse-shoe Fall is deeply located at the right bend of the ellipse formed by the entire chasm. Over it is precipitated the great bulk of the river, which fell over the edge with a smooth and graceful curve in one huge muddy mass, and descended in an unbroken sheet until lost to the eye in the volumes of spray below.

The Rocket Fall is on the left of the Horse-shoe, and, though insignificant in volume, is a cascade of extreme beauty, excelling those of Tivoli. This Fall after descending perpendicularly a great depth, encounters a projecting ledge of rock from which it glances with great velocity, whiteness, and brilliancy, forming in its descent the parabolic curve of a rocket, and sending off brilliant white jets resembling falling stars and tailed meteors.

The Roarer, so named from its noise, is nearer the Horse-shoe than the Rocket, and larger in volume; it descends in two streams upon a shelf of rock, down the highly inclined surface of which they rush with much noise and rapidity in one mingled mass of foam. In the dry weather no less than six or seven other Falls are distinguishable. I observed a number of small rills which, after descending some distance, separated into threads: these, in descending, became gradually divided into drops and spray, and mingled with the ascending wreaths of mist, apparently never reaching the bottom of the cataract.

In order to ascertain the height of the principal Fall, we let down a plummet attached to about 1000 feet of rope; but it got entangled near the bottom of the precipice, and broke in our exertions to draw it up. Mr. T. Lushington, of the Madras Civil Service, informs me, that he had successfully measured it in the dry season, and the result of these measurements were as follow:—

	Feet.
From the top of the Falls to the surface of the water in the basin below, ...	888
Depth of water in the basin, ...	300
Total, ...	1188 feet.

The sheet of water above the Falls was about 300 yards broad, (Mr. E. Maltby, of the Civil Service, informs me it is sometimes nearly 600 yards broad), and at least on average eight feet deep; current about six

or seven miles per hour. In the dry season it is scarcely knee-deep, and can be forded immediately above the Falls, with perfect safety, to the opposite bank, whence a path, partly hewn in the rock, leads to the basin and bed of the river below, impracticable or nearly so in the depth of the monsoon. There are many other cascades in Upper Canara seen glancing among the forest-clad heights of the Ghauts, but which are approachable with difficulty during the monsoon, for instance, those near Yellapoor, and Honeycoom, about three koss from Allawully.

To have a true estimate of the beauty of the Falls of Gairsuppa, they should be visited both during the monsoon, and when the water in the river is so low as to admit of their being viewed from below.

The rocks immediately beneath must present one of the most striking illustrations in the world of the eroding action of falling water, as proved by the immense depth of the basin. To these must be added the abrading effects of precipitated masses of rock. At the time of my visit not less than 43,000 cubic feet of water, by rough calculation, were falling per second into this vast rock basin.

The precipice, over which the water falls, affords a fine section of the gneiss and its associated hypogene schists, which dip Easterly and Northerly away from the Falls at an angle of about 35°. The gneiss is composed of quartz and felspar, with both mica and hornblende, and alternates with micaceous, talcose, actynolitic, chloritic and hornblende schists, imbedding (especially the latter) iron pyrites. These rocks are penetrated by veins of quartz and felspar, and also of a fine-grained granite composed of small grains of white felspar, quartz, and mica. Christie is of opinion, that this rock is not so old a granite as the ordinary granites of India, and that this is the only locality in India where he has met with primitive gneiss. No sound geological proof, however, is assigned for this opinion. All the granites of India are of posterior origin to the hypogene rocks, which they have invaded and altered. Regarding the age of the hypogene rocks themselves—always a most difficult problem to solve—we are still in the dark; nor does the fact of this granite being associated with the so-called "primitive gneiss," lead us to infer an origin more recent than the ordinary granites of South India.

The mass of hypogene rocks has evidently been worn back several hundred feet by the erosion and abrasion of the cataract; the softer

talcose and micaceous schists have suffered most. Mr. E. Maltby tells me, that an instance lately occurred of the manner in which the great Fall has receded. One of the crags composing the edge of the precipice gave way, and in its descent struck a projecting ledge of rock with so violent a concussion as to carry away a large extent of the face of the precipice. The whole mass fell into the basin below with a noise that startled the country for some miles around.

Rock basins are frequent in the bed of the river, which is worn in the rock, and rugged with water-worn rocky masses. The Falls of Gairsuppa may be justly ranked amongst the most magnificent cataracts of the globe. While excelled in height by the Cerosoli and Evanson cascades in the Alps,* and the Falls of the Arve in Savoy, the Gairsuppa cataract surpasses them in volume of water precipitated; and while much inferior to Niagara in volume, it far excels these celebrated Falls of the New World in height.

There are other picturesque falls and cascades in this part of the Ghauts: those most worth seeing are the cascades of Honeycoom, about three koss from Allawully, and those of Yellapoor. Farther North are the splendid Falls of the Yenna in the Mahabuleshwar hills, 600 feet high; and to the South those of the Cauvery, 300—viz., the Gunga Chakki 300 feet high, and the Burra Chakki, or Southern Fall, about 200 feet. Then come the Cascades of the Neilgherris, viz. those of Pykari, Kaitee or Kulhattee, and the Elk cataract. The Falls of Courtallum in Tinnevelly are abont 220 feet high, and the sacred cataract of Pupanassum among the Ghauts of Travancore 160 feet high, and lastly, of the Falls of Komari near Cape Comorin. The mass of water precipitated over these Falls in the monsoon, and the amount of erosion and minor details are still desiderata. Many other Cascades exist in the Western Ghauts, of which there are no published accounts at all. Those of Gokauk I have already attempted to describe.

* The height of the Cerosoli Cascade is 2400 feet; that of Evanson, 1200 feet; and the Falls of the Arve, 1100 feet.

At Niagara a sheet of water, two miles across, is contracted to less than half its former breadth, and in the state of an impetuous rapid, running at the rate of seven or eight miles an hour, and about 25 feet in depth, is hurled over a projecting mass of horizontal limestone strata down a precipice 164 feet high, over which it falls in two great sheets into the basin below.

Western façade of the Ghauts. We now descended the Ghauts by the Hossulmakki Pass. Gneiss and its associated schists are seen as at Gairsuppa; but the gneiss is not so abundant.

These rocks are for the most part covered by a bed of red clay, sometimes fifteen feet thick; and on the summit of the Ghaut by laterite, in insulated beds and large dark coloured blocks. The laterite is almost wanting on the steepest descents, but is seen on the terraces which break the declivity, and again at a short distance from the base covering for the most part the lowlands of Canara to the sea at Honore.

Not far from the summit of the Ghauts two dykes of basaltic greenstone were crossed, running in a S. E. direction. The dip of the hypogene schists, which compose the great mass of the mountain chain, is irregular and confused, both on the descent and at the base.

The amount of dip varies from nearly vertical to horizontal, and the strata in many situations have suffered irregular flexures and contortions. One great mass of schists at the base dipped Westerly at an angle of 30°.

Base of the Western Ghauts. The gneiss and mica schists at the base of the Ghauts are veined with a pegmatite composed of white quartz, and flesh-coloured felspar, which is rather massive than schistose, and occasionally exhibits a tendency to assume the doubly oblique prismatic structure, or primary form of the latter mineral. Sometimes silvery white mica is seen segregated in this rock in very large rhombic prisms, capable of being divided, like the hemi-prismatic talc mica of Russia, called Muscovy glass, into extremely thin lamellæ.

The mica schist passes distinctly into a chloritic clay slate, and into reddish and variegated slate clays resembling those around Darwar in the South Mahratta country. The white and purplish varieties have the same soft, and obscurely slaty structure. These again, where exposed, rapidly assume the state of clay, under the heavy monsoon rains.

I observed several groupes of pinnacled columns, a foot or more in height, formed in these clays by the action of the heavy drops of rain falling from the high forest trees which shade them. On the top of each pinnacle was a small pebble, which explained the *modus operandi*.

These pebbles had been scattered over the surface of the clay, and had protected like a cap the portion of clay immediately under it from the downward washing action of these heavy drops, which had evidently worn away the intervening portions not similarly capped and protected. On removing the stone from the top of one of these columns, it was soon washed down by the heavy rain then falling.

Large veins of white, blackish and faint rose-coloured quartz associated with felspar, and imbedding large plates of silvery mica, are seen in the schists which in disintegration form a white earth with crimson dots and patches.

Town of Gairsuppa. A short distance Westerly from the base of the Ghauts, and about sixteen miles direct distance from the sea at Honore, stands the modern village or town of Gairsuppa, pleasantly situated on the left bank of the river to whose Falls it has given its name. It is shaded by a grove of tall cocoa-nut trees.

A little to the South of the present village lie the ruins of the ancient town which, under the rule of the Jaina Rajas of Ikery and Bednore, and the female dynasty of Baira-devi, is said to have contained a lac of habitations, and seventy-four Bastis or Jaina temples.

Although these traditions are not to be relied on implicitly, still there are marks of "Gairsuppa" having once been a place of considerable importance, as evident by the extent of the mounds and remains of walls enclosures, wells, &c. The remnants of five or six Jaina temples are still visible, in one of which stood the *Chatúr Múki*, or four-faced idol of this sect.

It now comprises about fifty houses, inhabited principally by Sirigarras, a few Mahomedans, Conany Brahmins, and the low caste Halipaiks.

The Haiga Brahmins live chiefly on their own estates in houses scattered over the surface of the tract from which they derive their appellation of "Haiga," extending from Honore to Gokern.

From Gairsuppa to Honore. The face of the country from the town of Gairsuppa to Honore is diversified by hill and dale, well clothed with wood and thicket. The formation is chiefly laterite covering the hypogene schists, and forming long low ranges skirting the vallies, through which the Ghaut drainage finds its way to the sea, and flat-topped conical hills. Although the highest present freshes do not reach the base of the laterite cliffs which flank their banks, it is

evident that they must have done so at some more ancient epoch during the elevation of the Ghauts from the bed of the ocean. They present alternately salient and re-entering angles, precisely similar to those seen in the banks of a large river.

Honore. The fort of Honore, or more correctly Honawar, stands on high, flat-topped cliffs of laterite, the base of which is washed by the embouchure of the Sarawati or Gairsuppa river, which here forms an extensive back-water or lagoon, owing to its mouth being obstructed by a bar of sand. The channel is said to have shifted within the last fourteen years.

The embouchure to the N. E. is protected by a small projecting island. The river during the rains is navigable for native craft as far as Chendawar.

The remains of Tippoo's lines are still to be seen on the laterite cliffs to the E. N. E. The public buildings, bungalows of the civilians and military, occupy the top of the cliff on which the old fort stood, and of which nothing but the foundations are now visible.

The native town lies at the base of the cliffs, and contains between five and six hundred houses, inhabited principally by Concany Brahmins, Haiga Brahmins, Mussulmans, native Christians, Halipaiks, Gouras, and a few Jains.

The staple produce is rice, cocoa-nut, and betel-nut. Salt fish is exported in considerable quantity, and the Gurugars here are celebrated for their skill in carving the sandal-wood of the Ghauts into work-boxes, card-cases, desks, &c.

Honore was early a place of considerable traffic. The Portuguese erected a fort here in 1505 A. D., and Hyder a dockyard, for the purpose of building a navy.

It is now a small civil and military station, subordinate to Mangalore, the head-quarters of the Collectorate of Canara. The temperature of the river freshes here in the month of August, was 78°. Temperature of sea 76°. Of wells from 84 to 87°. The last, which is that of a spring called Ram Thert, is possibly thermal? Temperature of air in the shade at the time 81°. Off the mouth of the river is a bold picturesque islet, said to abound in iron ore.

On the bank of the river near its mouth and close to the water's edge, I found some rounded fragments of a cream-coloured fossil lime-

stone, which at first from their situation and rolled appearance, I thought had been transported from the Ghauts by the river freshes; but which, on farther enquiry, I found had been discharged as ballast by boatmen from the N. of Bombay, probably from Cutch.

Some of these fossils are evidently a species of nummulite; others have a singular spiral structure, and spherical globular form, of which my friend Captain Allardyce has favoured me with the following magnified drawings. *(See Fig., Diagrams* 1 *and* 2.*)*

Of these singular fossils, I shall give Captain Allardyce's description, instead of my own.

Description of Fig. 1.

This is a section of the fossil as it is most frequently seen: it shews little of the structure, except that it is convolute in this direction, which leads to the idea of its being a shell, and this a section across its axis or column.

Description of Fig. 2.

This is a section of the same shell in the direction of its column: the outer portion is an even fracture towards the centre tending to divide the shell equally; but the interior portion must be supposed raised and hemispherical, part of the crust having been removed to shew the structure.

The striæ are minute grooves, being the longitudinal sections of a set of capillary tubes that run spirally round the column in number amounting to 50 or 100 all abreast.

The transverse section of these tubes is seen in the last whorl near the circumference, where they are cut across, and appear in the shape of pores or holes. During each revolution the tubes terminate six or eight times in a general partition, which runs from one end of the column to the other; so that these partitions resemble the divisions of an orange or the valves of a capsule. The tubes can be nothing else than spiral cells, while instead of one as in other shells, there is a great number combined, and it appears as if the animal had been divided into many parts like the corals. The thickness of the crust, as compared with the diameter of the cells, is extraordinary; and in this respect also there is a resemblance to the corals and encrinites.

The exterior shape of the fossil is subglobose.

There is another organic form contained in this limestone, of which the following figure No. 3, will give an idea, and which I think may be the true transverse section of No. 2. It exhibits concentric lines of holes or pores, slightly depressed at the extremities, and generally three in number. *(See Fig., Diagram* 3.*)*

These fossils do not appear in the Cutch catalogue, or in other figured fossils of India that have fallen under my notice.

On the Meris *and* Abors *of Assam. By Lieut.* J. T. E. Dalton, *Assistant Commissioner, Assam. In a letter to Major* Jenkins. *Communicated by the Government of India.*

My dear Major,—I have this moment received yours of the 8th, for which many thanks. I fully intended sending you a supplemental paper, giving such information as I was able to collect regarding the Abors, their trade with the Meris, and communication with Thibet. The account I sent you was hurriedly written, and is, I know, very incomplete in many material points; but as a mere programme for the more ample narrative we may next year be, I hope, enabled to compile, it may not be necessary to add much to it at present.

The Customs, Language, Religion, &c. There is no very material difference between the Abors and Meris. They are evidently of common origin, and the Duphlas are of the same race. The Meris from their intercourse with the plains are, in some respects, more civilized, but almost all I have said concerning them applies equally to the tribes more remote. They intermarry with them, exchange slaves, and are generally in the habit of constant intercourse. The Meris, many of whom have become rich in cattle and goods, appreciate the value of combining for mutual support, and dwell in villages. The Abors, as they themselves say, are like tigers, two cannot dwell in one den; and I understand their houses are scattered singly or in groups of two and three over the immense extent of mountainous country occupied by them.

The Meris say, that whenever a few families of Abors have united into a society, fierce feuds about women and summary vengeance, or the

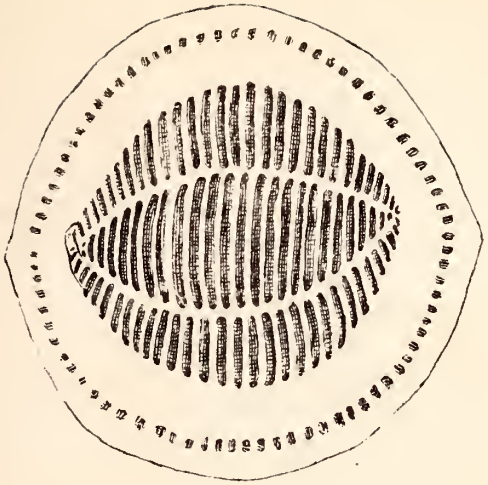


Fig 2

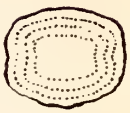


Fig 3

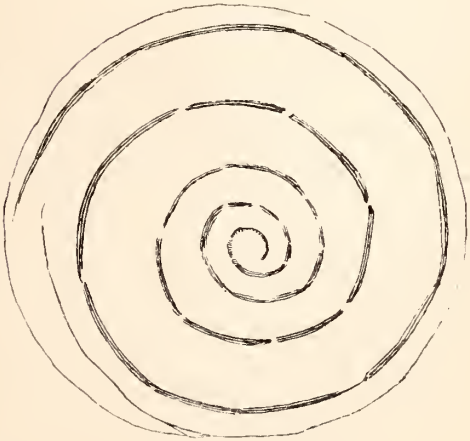


Fig 1

Fossil bodies (magnified)
to illustrate Captain Newbold's paper.

dread of it, soon breaks up or scatters the community. They therefore prefer building apart; and depending upon their own resources for maintaining themselves in their isolated positions. They are compelled to be more industrious than the Meris, and can fashion themselves daos and weave coarse cloth, arts of which the Meris are ignorant, or more correctly speaking, which they have lost. The iron for the former is, I believe, obtained from the other side, for I have not learnt that they understand the art of working the ore, and that which the Meris import from the plains they purchase ready made into daos for their own use.

The cotton used in the coarse cloths they weave is grown by themselves, very little of it ever finds its way down here; but I saw one load of it this year, and it appeared of excellent quality. Between the Abors and Meris there is a considerable trade. The Meris import from the Abor country munjeet, beads, daos, "Deo guntas" the little bells I have described in my former account, and cooking utensils of metal, Myttons, slaves, and I may say wives, their marriages being so entirely a matter of barter. In return for which the Abors take cloths of Assamese manufacture, salt or any articles imported by the Meris from Assam. Of the mode in which their intercourse with Thibet is carried on, I have as yet obtained very little information. I have never yet met with an Abor who had been across, and the Meris I have questioned on the subject assert they had not seen the tribes who are in direct communication; but from those who had seen them they had heard of a fine rich country inhabited by people who wore fine clothes, dwelt in stone houses, and rode on horses, which was watered by a mighty river. How ever they manage it, the Abors import from this country every thing above enumerated, save the munjeet, slaves, and wives that they interchange with the Meris. The large metal dishes thus imported are of superior manufacture, and fetch high prices when brought in here by the Meris. The Meris possess cooking vessels of great size so obtained, which they use at their feasts, but are very jealous of producing before strangers. The daos are of superior temper, but of rude finish, and of the workmanship, as I believe, of Thibetan blacksmiths; they are probably made in the rough for the express purpose of barter with these people, as they are made in Luckimpore for the Meris. In addition to the articles I have enumerated, the Abors import salt (from the description given of it rock salt) from the north, for it appears they

have a very scanty supply of it, and gladly take our salt from the Meris when they can get it. I presume it to be an importation: what they export in return I know not, but most likely cotton and munjeet. Between the Duphla and Meris countries there is a tribe called "Auks" and "Auka Meris" by the Assamese, who never visit the plains, but yet appear, from all I have been able to glean regarding them, very superior to the tribes of this family we are acquainted with. Surrounded by lofty mountains, the country they inhabit is an extensive valley, represented as being perfectly level, and watered by a branch or perhaps the principal stream of the Soondree, and richly cultivated. They are said to possess fifteen large villages, the cultivation of one adjoining that of the other, so that there is no waste land between. Their chief cultivation and sole staple appears to be rice, to rear which they irrigate the land, and are said to have magnificent crops in return. Their lands are not, I am told, adapted to the cultivation of cotton, but they procure as much of it as they require from the Abors in exchange for rice. In industry and art they are acknowledged by the Meris to be very much *their* superiors, who however, perhaps for this very reason, look upon the Aukas as their inferiors in the scale of creation. The Auka ladies wear blue or black petticoats, and jackets of white cotton of their own manufacture: their faces are tatooed "*unde nomen*" Auka, which is given to them by the Assamese. They call themselves "Tenae." The males do not rejoice in much drapery; they wear a girdle of cane-work painted red, which hangs down behind in a long bushy tail I am told, and must have a comical effect. Of their religion all I have heard is, that every fourth year there is a kind of religious jubilee devoted to sacrificing and feasting at the different villages by turns; and on these occasions, some one officiates as priest: other particulars in which they differ from the Meris have been related to me. The Meris, however extensive the family and the number of married couples it includes, all occupy one house. The young men of the Tenae tribe when they marry leave their fathers' house, and set up for themselves. During the Moamorya troubles many of the Assamese of this division are said to have sought and found in the Tenae valley a refuge from the persecutions of that sect, the refugees appear to have been generously treated, and no obstacles were opposed to their return to their own country when the dangers that threatened them were removed; but I have sometimes heard that a few

remained of their own free-will, who settled in the valley, and are still to be found there.

The Tenae appear to be a very peaceably disposed people, but they occasionally are compelled to take up arms to punish marauding Abors, and they are said to do the business at once effectually and honorably, whilst the Meris and Abors confine their warfare to nocturnal and secret attacks, and, if successful in effecting a surprise, indiscriminately massacre men, women, and children. The Tenae declare hostilities, march openly to attack their enemy, and make war only on men, and their revenge does not extend beyond the simple attainment of their object in taking up arms. If this be true, it places them in a high rank, as a humane people, amongst our Mountain tribes. Tema is my authority for both assertions, humiliating as it should have been to him, and honorable to them; but he made the confession of the Meri mode of waging war without any remorse of conscience.

Assured that a more particular and better authenticated account of a people so sequestered and peculiar, would be interesting, I would, if permitted, next cold season make every effort to visit them, in the manner least calculated to excite jealousy or alarm. Their country is most easily accessible from the Duphla Door; but I am not yet well acquainted with this tribe, and am not prepared to say that it would be safe to attempt a passage through their country without a strong guard, which would defeat my object entirely; and having, I think, secured the good-will of the Meris, I would prefer their route, though said to possess more natural difficulties; ascending the Soobanshiri as before to Siploo Ghaut, I propose, after having paid Tema's country a second visit and explored such of the Sowrock country as lies on this side of the Soobanshiri, to proceed to the Turbotheah villages. The Turbotheah have promised to assist me in every way from Tema's village to their own, and as the Aukas or Tenae are only two good marches from the Turbotheah Meris, I should hope to be able to make amicable arrangements with them and the intervening Abors to permit me to proceed in safety to their valley.

I cannot hold out any very sanguine expectations of being able to penetrate so far as to behold Thibet from the mountain tops, or to gain much knowledge of that country; but without crossing the snowy range there is a vast extent of interesting country to explore, and if Mr.

Masters agrees to accompany me, we may pick up much worth knowing. I am sorry I was unable to send you a sketch of my late route. I wrote to Mr. Hornton, for a surveyor and the loan of a compass for myself, but unfortunately my letter did not find him at home, and I did not receive his answer till after my return. I had made my arrangements, and could not wait. I send you herewith a very rough ideal sketch, (published at p. 226) the ill execution of which I hope you will excuse, as I am very much hurried.

This time next year I hope to be able to propose an excursion to explore the Duphlas country. I had an interview yesterday with a considerable number of them, those for whom the salt has been sanctioned; and having concluded the business of the day, I had an amicable talk with them, and, on the question of a visit being started, they made no demur.

Luckimpore, the 23rd March, 1845.

Notice of some Unpublished Coins of the Indo-Scythians. By Lieutenant Alexander Cunningham, *Engineers.*

In the accompanying plate are exhibited the small silver disc which was extracted from the Manikyala Tope by General Ventura, and several new coins of the Indo-Scythians, some of which are highly interesting from their undoubted Bauddha figures, emblems, and inscriptions. These coins afford the last links in the chain of evidence to prove the identity of the Indo-Scythian Kanerki, with the Buddhist prince Kanishka of Kashmir, as was conjectured by Mr. James Prinsep, so far back as 1833.

No. 1.—A thin piece of silver inscribed with an Ariano-Pali legend in two lines. In this short inscription, as in all the Tope inscriptions yet found, the letters are of a cursive and less decided form than those of the coins. Many of them are of course easily distinguishable; but there are others which bear no resemblance whatever to any of the letters found on the coins; and yet they can scarcely be new characters, as I believe that I have found the Ariano-Pali equivalent for every letter of the Sanskrit alphabet. Some of them may be new forms of known characters, and others are no doubt compound letters which may

possibly baffle us for a long time. The chief difficulty, however, lies in the loose and cursive manner of the writing, in which many letters of similar forms are represented by characters of the same shape.

In the present short inscription the only doubtful letters are in the lower line. The upper line reads simply *Gomangasa*, " of the anointed body (or limb)," from गोम *gom*, to anoint, and अंग *angga*, the body (or a member of it). In the lower line the first letter on the right is certainly *k*, (I write with two electro-type facsimiles of the original lying before me); the second looks more like *n* than any other letter; the third is *t*; the fourth is *tu* or *to*, according to my alphabet; and the last is clearly *s*: thus forming *kanatatusa*, which is the Pali form of the Sanskrit *kanyatratrasa*, " the supporter or cherisher of maidens." The whole inscription is therefore *Gomangasa kanatatusa*, " (Stupa or Tope) of the anointed body of Kanyatratra."

The gold coins extracted from this Tope by General Ventura declare, in my opinion, most unquestionably, the age of the monument. They belong to OHPKI or Hoerki, whom I identify with Hushka, a Tartar sovereign of Kashmir just before the beginning of the Christian era. In General Court's inscription the Tartar prince Kanishka is mentioned with the title of Maharaja; and this title is also found in a second cylinder inscription. From these instances I infer, that when a tope was erected over a royal personage, his royal titles were inserted; and that in the absence of any title, we may judge that the tope was built over either a relic of Buddha, or the ashes of some eminent follower. Bhagawa himself particularly mentions the merits to be acquired from building *thupa* (topes) over relics of *Sawaka* or *Chakkawati Rajas*. In the present instance therefore I believe that the great Manikyala tope was built over a *Sawaka* (Sanskrit *Srawaka*) or lay votary of Buddha, named Kanyatratra; and that General Court's smaller tope was built over the relics of Kanishka himself.

I can find no authority for the erection of topes over the relics of the Buddhist priesthood, although we possess the names of no less than twenty-seven of the chief priests or patriarchs of the Buddhists, from the death of Sakya Sinha to A. D. 499. I find that in B. C. 62 to 28, the patriarch of Western India was named Kia-na-shi-pho, probably *Kanyasibha*, " the praiser of maidens." There is some similarity between this name and that of *Kanyatratra*, " the cherisher of maidens;" but in the

absence of all authority showing that *stupas* were erected over the priesthood, it is impossible to insist upon the identity of the two persons.

In support of the values which I have given to two of the letters in this inscription, I must refer to other inscriptions in which these letters are found. The first of them, which I have read as ङ *ng*, in *Gomangasa*, occurs in Ventura's Manikyala cylinder inscription, in what is most likely the name of the father of Kanyatratra. That inscription I read as follows:

Swati-Siri-Munipasa-Gangaphuka-Munipa-putasa.

Swati Siri is the Sanskrit *Swasti Sri*, an auspicious invocation of very common occurrence in the beginning of inscriptions even at the present day. *Muni* is a holy personage, with the affix of *pa*, usually given to holy men; for instance *Gwali*, after whom *Gwali awara* (Gwalior) is named, is invariably called Gwalipa. *Gangaphuka* means "the bird of the Ganges;" and the whole legend is "All hail! (Tope) of the Muni, the son of Gangaphuka Muni." This of course refers to Kanyatratra Muni; and indeed the very name of Manikiyala points to the same conclusion; *Muni-ka-alaya* being "the place of the Muni."* Another Muni is mentioned in Court's Manikyala inscription as well as the Maharaja Kanishka.

The same letter occurs again in the legends of the Kozola-Kadaphes, and Kozonlo-Kadphizes coins. The native legends of these coins are, with one or two slight variations, identical. That of Kozola-Kadaphes which has on the Greek side ZAΘOY KOZOΛA KΛΔAΦEC XOPANCY, reads

Khushangasa Yatugasa Kujula Kasasa, &c.

that of Kozonlo-Kadphizes, which has on the Greek side KOZOYΛO KAΔΦIZOY KOPC or KOPCO, reads

Kushangasa Yatugasa Kujula Kasasa, &c.

which I interpret as "(Coin) of the king of the Kuei-shang, Kozola-Kadaphes." We know that the Kuei-shang were one of the five tribes of the Great Yu-chi, which tribe I identify with the Asiani, one of the people

* Another derivation may be from *Mani*, a gem: *Mani-ki-alaya*, "the place or receptacle of the gem or relic."

that overthrew the Bactrian Greek kingdom. ZAΘOC, I suppose to be only the Greek rendering of the Zend *khshathra*, king, of which we possess no less than four other readings, namely: Ξυατρης, Ξυαρτης, Ξαρτης, and Ξαθρης; the last of which is almost the same as the ZAΘOΣ of our coins. The Kuei-shang tribe occupied a city to the south of So-mo-ki-an, or Samarkand, called Kuei-shwang-na, which name is still preserved in the modern Kesh, the birth-place of Timur. It is called Kashániyah by Abulfeda.

Another tribe of the Great Yuchi were the Shwang-mi, who occupied the country called Shang-mi to the south of Wakhan and of the Great Mountains, which must be the modern Chitral and Mastuj.

A third tribe, the Hieu-mi, occupied the country on the Upper Oxus, or Wakhan. They gave their name to their capital, which was called Ho-mé; and from them, I believe, the river Oxus to have taken its name of Amú, because it rose in the country of the Hieu-mi. The Shakh river gave its name to Shakhnan, and the Waksh or Wakh river gave its name to Wakhan. Waksh, or Oksh وكش must have been the name from which the Greeks made Oxus.

The Hieu-mi tribe had at least one powerful monarch in the second Kadphises, who is called OOHMO on all his coins; a name which the French *Savans* MM. R. Rochette and Jacquet curiously divided, giving one-half to Kadphises, whom they called Mokadphises, and leaving the other half to stand upon its own responsibility.

The character which I have read as *tu* or *to* occurs in the legend of the coins of this Kadphises, which I read somewhat differently from Mr. Prinsep, he having been misled by giving an erroneous value to the letter *g*,* which he read as *ph*. The whole legend, according to my alphabet, is, '*Maharajasa Rajadirajasa Sabatugahi-Surasa Mahi-Surasa Hima Ka-*

* It is now nearly four years since I corrected this error from the legends of the coins of Gondophares, and his nephew Abdagases. On the coins of the latter the Greek legend is BAΣIΛ YAΣIΛ YNΔIΦEPШ AΔEΛΦIΔEШΣ, and the native legend is "*Maharajasa tadarasa Abdagasasa Gondophara bhata-putasa*," "(Coin) of the great King, the preserver, Abdagases, Gondophara's-brother's-son." Here we have *bhata-puta*, the *literal* translation of the Greek AΔEΛΦIΔEШΣ. The Kashmiris still say *Bhai-putr*. The letter *g* occurs also in the native transcript of the Greek Στρατηγος which is rendered in Pali *Thategasa*. The whole legend is "*Aspavatisa Thategasa jayatasa Indavatiputasa*," "(Coin) of the General Aspahates, the victorious, the son of Indrabates." Aspabates was the General of Azas. His coins are found in the Western Panjab.

phisasa Tatasa,' " (Coin) of the great King, the "King of kings, the every-where-destroying-hero, the hero-of-the-world, (of the tribe of) Hieu-mi, KADPHISES, the preserver." On one well preserved coin the letter *hi* is omitted in the middle of the inscription, which, if intentional, simplifies the third title to '*Sabatoga-Surasa,*' "the all-pervading hero." *Sabatu* is the regular Pali-form of the Sanscrit *Sarvvatra,* everywhere, in all places.

The coins which I am now about to describe, with the single exception of No. 4, have all been in my own possession. My gold coins have passed into the hands of Sir Herbert Maddock; but I still retain perfect impressions of them both in lead and sealing-wax. Figs. 2, 3 and 4 are unique; fig. 5 is not uncommon; but finely preserved specimens, such as the one now published, are extremely rare. Fig. 6 is unique. Of Fig. 7, I have seen only three specimens; one of smaller size in Mr. James Prinsep's cabinet; a specimen in my own possession from the Kabul valley; and the coin now published, which was amongst those extracted by General Ventura from the Manikyala Tope, and is now in my cabinet. Fig. 8, is common; but good specimens are very rare. Figs. 9, 10 and 11 are all rare: the last is the rarest, and the first the least rare.

No. 2.—A round gold coin, weighing 122 grains, of very good make, and in excellent order.

Obverse. Half length figure of the king inclined to the left; the head encircled by a halo, and dressed in a highly ornamented tiara: flames issue from his shoulders; his left hand grasps a sceptre, and in his upraised right hand he holds before him a cylindrical object by a handle below. His dress consists of an under robe fastened down the middle, and an upper garment open in front, with loose sleeves, and adorned with necklaces and armlets. Inscription around the piece in barbarous Greek characters PAO NANO PAO O (ηρκι) KOPANO, "The King of kings, HOERKI, Koran."

Reverse. A full length winged female figure, dressed in an upper garment with short sleeves, and in a long under robe reaching to her feet: she carries a trident, or perhaps an elongated cornucopia in her left hand, and in her right she holds out a chaplet. In the field to the right is the usual monograph of the Indo-Scythian coins; and to the left in bad Greek characters the legend CAMI (or OANI) MAO; the whole ornamented by a dotted circle.

The figure on the reverse of this piece is very like that of Victory on the coins of Menander, Azas, and Undopherras; and it has also a striking resemblance to the *Ardokro*, depicted in No. 10 of the accompanying plate. But the legend appears to be *Vami Mao*, which, if intended for the Sanscrit वामा, *Vama*, a woman, may be translated as "the female Moon," or Chandri, the consort of Surya or the Sun. For the Moon is an Androgyal deity; being male or the god Chandra, when in opposition to the Sun, and becoming female or the goddess Chandri, when in conjunction with the Sun. If the legend should be *Vani Mao*, the interpretation will then perhaps denote some identification of the Moon with the goddess *Saraswati*, who as वाणी, *Vani*, was the goddess of Science and Learning, and who, *as the consort of the Sun*, became the mother of the river Jumna. वन्ही, *Vahni*, fire, can scarcely be coupled with Mao, the Moon.

No. 3.—A round gold coin, weighing 125 grains, of good make, and in fair order.

Obverse. Essentially the same as that of the coin just described, excepting that the left hand of the king is apparently empty, and that the ends of a diadem are seen floating behind his head. Legend in bad Greek characters, almost illegible from faulty striking, but probably the same as the last.

Reverse. A full length male figure to the left, clothed in a long sleeved dress, with a loose robe flowing behind; the head surrounded by a radiated halo; the right arm extended to the right, and the left hand resting on the hip. In the field to the left the common Indo-Scythian monograph; and to the right in bad Greek letters the legend OM BOΔ, or perhaps OΔI BOΔ; either *Aum Buddha*, or *Adi Buddha*; the BOΔ being most probably a contraction of BOΔΥΑΣ, which was one of the several Greek renderings of the name of Buddha.

On both of these coins, the instrument, which the prince holds in his right hand, resembles exactly the praying cylinder which is used by all Lamas of the present day. It is called *Muni* by the Bhotias, and *Skoru* by the Tibetans. I have one now lying before me, which I procured from a Lama near Triloknath on the *Chandrabhaga* river. It is a thin cylinder of brass, three inches long, and two inches and a half in diameter, filled with a long paper roll of writing, which, I was told, contained only prayers. By a gentle motion of the hand it is kept continually re-

volving upon its axis, which, being prolonged below, forms the handle of the instrument. The motion is assisted and regulated by a small octagonal piece of iron fastened by a short chain to the side of the cylinder.

Moorcroft saw one of these mechanical prayer-mills, of a large size, turned by water, which probably performed the prayers of a whole village, while the inhabitants were at work in their fields. Every Lama carries a *Skoru* or *Muni;* and if these Indo-Scythian kings had spiritual as well as temporal authority, as the flames issuing from their shoulders would seem to show, (Mahawanso, p. 27,) no instrument could be more appropriately put in their hands than the praying cylinder.

A common expression in Buddhist writings is "turning the wheel of the law;" and in the 7th volume of the Asiatic Society's Journal, p. 147, M. Csoma states, on Buddhistical authority, that the 8th general principle for the conduct of a zealous Buddhist is "to exhort all Buddhas to turn the 'wheel of religion.'" Now I would suggest that this "wheel of the law," or "wheel of religion," *(dharmma-chakra)* may be only the praying cylinder; and that to turn the wheel of the law meant *literally* to turn the prayer cylinder; and *figuratively* to make religion advance. This interpretation, which would prove, beyond all doubt, that these princes were of the Buddhist religion, is I think fully borne out by the Buddhistical version which I have given to the reverse legend of No. 3, and by the Buddhistical figures and legends on the reverses of Nos. 6 and 7.

No. 4.—A round gold coin, of beautiful make, and in excellent preservation. This piece belonged to the collection of my much lamented friend, the late Dr. Lord; and it is now, I believe, in the museum of the East India House.

Obverse. A full length male figure to the left, apparently dressed in a complete suit of chain armor; the head encircled by a halo, and covered by a helmet, having long flaps which protect the ears;— the left hand raised and holding a trident, and the right hand pointing downwards to an undecided object, which may probably be only a cylinder similar to those found in the Topes; or it may be a small Stupa itself, as it is surmounted by a trident. In either case it would be an object held sacred as containing a relic of Buddha. Legend in bad Greek characters around the piece PAO NANO PAO BAAANO KOPANO, "The King of kings, BALANUS (or BALA,) Koran.

Reverse. A three-headed full length figure to the right, standing before a bull, which has a bell hanging from its neck; the figure clad in the Indian *dhoti*, and wearing the sacred string of the superior castes; and holding out in his three hands, three different objects, one of which looks like a noose. The Indo-Scythian monograph over the bull's head; and to the left in bad Greek letters the word OKPO, which Professor Lassen has happily explained by *Ugra*, one of the many names of Siva: the whole surrounded by a dotted circle.

This figure is, I believe, the personification of Siva, under his triple form; the same in which he is sculptured in the caves of Elephanta and Ellora; one head representing the destroying power, and the other heads the *two creative powers*, male and female, or Siva and Parvati, behind whom stands the sacred bull Nandi. On the coin before us there are but three arms; although the triple headed busts of Siva have six arms: the other three arms have been omitted merely from want of space.

On this coin we have an entirely new name added to our Indo-Scythian list. In the annexed sketch it is but faintly traceable, as the lithographer has failed in faithfully representing my sketch: but I may mention that the first two letters are distinctly BA; the third is Λ or Δ, and the last three are ANO or perhaps AMO: thus forming either BAΛANO or BAΔANO. That the former is the true reading is, I think, almost confirmed by the following fact. The author of the Raja Tarangini in mentioning the cause of quarrel between the Raja Hiranya, and his younger brother Toramana, the Yuva Raja, states that Toramana, having melted down the ancient coin of the country called *Balahats*, framed *Dinars* in his own name. Now Bala-hat means simply "the mintage of Bala," who must therefore have been a former ruler of Kashmir; and was most probably this very Balan, whose name we have just discovered for the first time upon a coin. For I contend that Balan or Balano or Balanus, who is clearly from the make of his coin of the same family as Kanerki, was equally with him a king of Kashmir, and perhaps prior even to Kanerki; as this single coin is decidedly superior in execution to that of many of the Kanerki coins which I have seen. But Mr. Prinsep's engravings of the Kanerki gold coins exhibit several pieces of apparently the same beauty of workmanship; and therefore I shall be content for the present with ranging Balan in the series of Indo-Scythian princes immediately following Kanerki.

No. 5.—A round copper coin, of large size, of beautiful make, and in more perfect preservation than any other Indo-Scythian copper coin that I have seen.

Obverse. Full length figure of the king to the left, bearded; his head covered with a curious cap having a brim or peak to the front; and the ends of a diadem floating behind. He is dressed in a long coat, under which his trousers appear, and over which a loose robe falls behind in circular folds. His left hand grasps a spear or trident, and his right hand is pointed downwards over the same object which is seen on the obverse of No. 4. Legend in corrupted Greek characters: PAO KANHPKI, "king KANERKI."

Reverse. A radiated and bearded figure, running quickly to the left; dressed only in a pair of very short tight drawers, and holding up with both hands a large loose robe or cloak, which falls in circular folds behind him. To the left is the Indo-Scythian monograph; and to the right in bad Greek characters the word OAΔO; which Professor Lassen was the first to explain very happily by *Vado;* Sanskrit *Vata*, Zend *Vato*, and modern Persian *Bád*, or "the wind;" which is represented running more or less quickly on different coins. The coins of this type in copper are of three sizes; large, middle, and small.

No. 6.—A round copper coin, of large size, and uncommon thickness; of very good make, and in tolerable preservation.

Obverse. Exactly the same as the preceding.

Reverse. A figure seated in the Oriental fashion; the hair dressed in a knot on the top of the head, which is encircled by a halo formed of dots; the ears either elongated after the manner of Buddhist sculptures, or adorned with jewels; the left hand resting upon the feet, and the right hand, with fingers extended, placed opposite the breast, in a manner peculiar to Buddhist figures, and more particularly to Amogha Siddha, one of the five celestial Buddhas. Amogha Siddha is also a title of Adi Buddha himself. Monograph to the left: and legend around the piece in corrupted Greek characters, O BOΛA CAM; which I think may be intended for OM BOΔA CAMANA or *Aum Buddha Sramana*. I do not by any means insist upon the correctness of this reading; but it is a highly probable one, from its being placed around an eminently characteristic Bauddha figure.

No. 7.—A round copper coin, of large size, thickly coated with indurated verdigris. This piece is one of those extracted by General Ventura from the Manikyala Tope, and which I obtained in exchange from Mr. Prinsep.

Obverse. Similar to Nos. 5 and 6.

Reverse. A full length figure standing to the front, and clad in a long dress: the head surrounded by a circular halo; and the hands raised together before the breast in an attitude, which is peculiar to the figures of Samant Bhadra, the first of the celestial Bodhisatwas. Samant Bhadra is also one of the names of Adi Buddha, (see Hodgson's Trans. R. A. Soc. 2, p. 239.) The monograph to the left: and legend in corrupted Greek characters, ~ O AΔO BOΔ CAMA .. .. A similar copper coin, of middle size, is figured in the Asiatic Society's Journal, (vol. 3, pl. 25, fig. 11,) on which the legend, as given by Mr. Prinsep, is OΔYO BOY CAKANA. By a comparison of the two legends, I am inclined to read them either as *Aum Adi Buddha Sramana*, or simply as *Adi Buddha Sramana*. The first letter, which Prinsep read as O, has on this coin a turn to the left, which identifies it with the peculiar flourish, which is found at the commencement of many ancient inscriptions, and which is generally allowed to stand for the sacred unutterable syllable *Aum*. Of the letters to the left, the first four only are preserved upon the present coin: but they agree generally with those on Mr. Prinsep's engraved specimen. The first letter on both is C, and not Λ, as Professor Lassen has made it with some hesitation, and the last two letters on Mr. Prinsep's coin are NA: consequently we have altogether CAMANA for *Sramana*, 'an ascetic,' which is a common appellation of Buddha, and was well known to the Greeks as ZAPMANOΣ or ΣΞMNOΣ.

No. 8.—A round copper coin, of large size, of good make, and in good order.

Obverse. A male figure mounted on an elephant, moving to the right. Legend in corrupt Greek characters around the piece, PAO (*vavo*) PAO KENOPANO "the King of kings, KENORANO."

Reverse. A full length male figure, dressed in flowing garments; with the right hand raised, and the left hand resting on the hip. Behind his shoulders a large lunar crescent. Legend to the right, MAO 'the Moon'; and to the left the usual Indo-Scythian monograph.

No. 9.—A round copper coin, of middle size, of good make, and in good order.

Obverse. The same as No. 8.

Reverse. A full length female figure to the right, clad in a long robe, with a short tunic reaching to the waist; the left hand supporting a cornucopia, and the right resting on the hip; the head covered, and surrounded by a halo. Corrupt Greek legend to the left, APΔOXPO; to the right, the usual Indo-Scythian monograph.

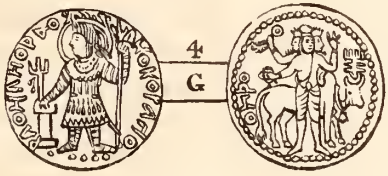
No. 10.—Essentially the same as the preceding; but the figure is looking to the left, and holding out a wreath in the out-stretched right hand.

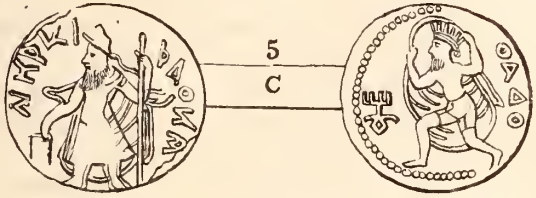
No. 11.—Precisely the same as No. 9: but the figure faces to the left.

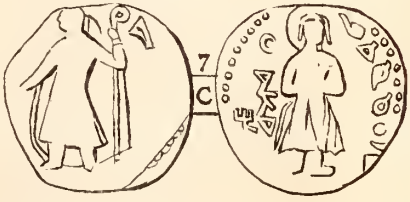
The title of KOPANO on these Indo-Scythian coins, which follows the names of KADAPHES, OERKI and KANERKI, has not yet been satisfactorily explained. It certainly cannot mean king, as we have *Zatlos* on the coins of Kadaphes, and *Rao-Nano-Rao* on the coins of his successors. In a paper on the coinage of Kashmir published in the Numismatic Chronicle of London in 1843, I suggested that it was derived from the Greek KOPΩNIΣ, *with curling horns;* and that the Arabic *Zul-karnain* pointed to that derivation. In this sense *Koran* would mean Alexander the Great; and the Princes who take that title would claim descent from Zul-karnain. XOPAN CV and KOPCO might then stand for KOPANου Συγγενους, "the kinsman of Koran;" and this interpretation offers a plausible reading for the Greek legend of the earlier coins of Kozonlo Kadphizes, on which we find BAΣIΛEΩΣ ΣTHPOΣ ΣY EPMAIOY, which I interpret as "(Coin) of the king, the preserver (Kadphizes) the kinsman of Hermæus." I have since found that the Mogul author Sanangsetzen declares, that the Tartar prince *Kanikia* bore the title of Prince of Mercy. It is probable therefore that Kanishka's title of Korano is derived from the Sanscrit *karuna*, mercy. This however still leaves unexplained the letters following *Koran* on the coins of Kadaphes and Kadphizes. On the former the title is XOPAN CV (and not XOPANOY as usually given). On the latter, it is KOPCO.

The happy conjecture made by Mr. James Prinsep in 1833, that the KANERKI of the coins was the great Buddhist Prince KANISHKA of Kashmir, has been amply confirmed by the Bauddha figures, emblems, and legends on the coins which I have just described. The Honorable

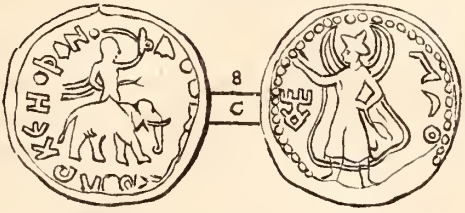
KANERKA







KENORANA



A. Cunningham, del.

Mr. Turnour also identified them in 1836. In 1838, Professor Lassen did not object to the identification of the names of Kanerki and Kanishka; nor even to that of Oerki (or Huirki) and Hushka: but he added "besides the difficulties in chronology another reason from the coins themselves is opposed to our recognizing Hushka and Kanishka in Oerki and Kanerki. Both of them are described as Buddhists; upon the coins of the latter however a worship, entirely deviating from that of the Buddhists, is distinctly obvious."

The difficulties in chronology have, I think, been satisfactorily accommodated in my paper on the coinage of Kashmir already mentioned, in which I showed that the Tartar prince Kanishka, according to both Brahmanical and Buddhistical authorities, flourished at the beginning of the Christian era; agreeing with the age of the smaller Manikyala Tope opened by General Court. In that Tope there was found a long inscription of *Maharaja* KANISHKA, accompanied with four gold coins of KANERKI, and seven Roman silver coins ranging in date from B. C. 73 to 33. The copper coins belonged to Kanerki himself, and to his immediate predecessors Kadaphes of the Kuei-shang tribe, and Kadphises of the Hieu-mi tribe. The Tope must have been erected posterior to B. C. 33, and most probably after the death of Kanishka in about A. D. 25.

The other difficulty has been successfully removed by the discovery of the coins now published, which bear eminently characteristic Bauddha figures, emblems, and inscriptions. On the golden bust coins we see the Prince himself represented with a halo round his head; with flames issuing from his shoulders, as sculptured on the figure of Buddha discovered by Dr. Gerard, (J. A. S. Bengal, vol. 3, pl. 26, fig. 1,) and with the prayer-cylinder (or *dharmma-chakra*) in his right hand; the identical instrument which is in the hand of every Lama of the present day.

The knowledge of this fact, of the identity of the religion of these two princes, we owe chiefly to the science of Numismatology; and the numismatist may proudly point to it as one of the many useful rays which the beacon of his favorite study has thrown over the treacherous quicksands of history. So true are the words of the poet,

> The medal, faithful to its charge of fame,
> Through climes and ages bears each Prince's name.

On Kunker formations, with Specimens. *By Captain* J. Abbott, B.A.

I have the pleasure to send you a few specimens of Kunker, collected by me in my late journey down the Ganges. I had purposed bringing away a small section of a Kunker formation, showing the substance in which it is imbedded and the strata immediately above and beneath; but I was travelling in too great haste for this. The accompanying specimens, however, exhibit nearly every species of Kunker the matrix of one, and its calx after the extraction of the lime by fire.

I have been so separated from scientific literature for many years past, that I know not what may be the existing theories of the formation of this mineral; and in offering the following am prepared to find myself forestalled if, indeed, the theory is well founded.

The word Kunker, in its general application, like our own term gravel, is applied by the natives to any small or rounded masses of stone, whatever their substance, but it includes especially every variety of the limestone under consideration. This is found in several forms in the wide plains of Upper and Central India. Not I think in Afghanistan nor Persia, nor any where beyond the influence of the periodical rains. It occurs only in mixed strata of sand and clay, which on analysis prove to be impregnated with lime, and its presence is generally denoted by the sterility of the soil above it.

Its position from the surface of the soil varies from ten to fifty feet or more. But although, through the erosion of the upper stratum (as for instance in the neighbourhood of large rivers) it may sometimes be found at the surface, it is never there formed or deposited originally.

Its forms are,—

1*st*. Small rounded drops, from the size of a pea to that of a bullet, in a matrix of clay and sand often of great depth, but seldom separated into distinct homogeneous strata.

2*ndly*. In distinct strata of larger masses, from the size of a small potato to that of a man's foot; with a matrix of clay, or of clay and sand mixed. In such cases the clay and sand strata are generally distinct.

3*rdly*. In what is improperly termed stratified Kunker, but which I take the liberty to name confluent Kunker, (almost all Kunker occurring in strata.) In this form it presents extensive fields, from one to five feet in thickness, generally very rugged and porous, but occasionally separable into compact masses of a hundred solid feet or more.

On considering the shapes of the granulated masses, they will be found to resemble the figures assumed by molten lead when plunged into water. The substance appears to be generally clay and carbonate of lime : the latter falling away freely under the action of the furnace, and leaving the clay in the form of a hardened mass more or less vitrified.

The formation of Kunker appears to me to be affected by the infiltration of rain water impregnated with lime through a bed of clay; to be in fact Tufa deposited in clay, or a sponge of clay saturated with the carbonate of lime.

When the heavy rains of the monsoon fall upon a soil of alternate sand and clay strata impregnated with lime, the water easily soaks through the loose texture of the gneiss sand, taking up with it a certain proportion of the lime in its passage. But on meeting the closer substance of the clay stratum it there stagnates for a while, and each of these clay strata becomes as it were the bottom of a subterranean lake, the absorption here being very gradual and difficult, and the water parting with its lime to the clay, ere it can be effected.

When the lime is contained by the soil in large quantity, and the clay stratum is dense or the duration of the deposit very long, confluent Kunker will be formed ; chiefly in the sandy stratum, but upon that of the clay : and should (if this surmise be just,) contain a larger proportion of sand than the granulated varieties.

When lime prevails in mixed soils of clay and sand, not distinctly stratified, the Kunker is found in very small grains dispersed confusedly through the mass. These seem to be formed by isolated drops of water impregnated with lime, which gradually filtering have deposited each a nucleus of lime, that yearly enlarges by fresh incrustations ; but very gradually, owing to there being no general arrest of the impregnated water. This minute Kunker forms the sand (so to speak,) of many of the streams of Central India.

Kunker yields almost the only lime used in Upper India by builders. The quality yielded by various strata is very various : often it is excellent, but never perhaps equal to that of the more solid limestones, or of the superficial Tufa deposited by streams.

It may appear improbable to some, that rain water should so readily absorb lime, or so easily part with it; but it is perfectly consistent with observed phenomena. In Malwa where the substratum for 1500 feet is

trap, and no limestones are known, the springs are so impregnated with lime, taken up in their passage through the clay stratum, as to frost the glass of the windows splashed in moistening tatties. This frost work is as complete as that produced by fluoric acid. The smaller streams exhibit the same impregnation; and wherever they fall over a precipice, huge masses of Tufa are deposited by them on the yearly growth of lichens upon the brink.

I have seen many such masses of several hundred tons weight, and one of these, torn from the precipice apparently by its own gravity, was quarried for many years for the supply of the finer lime used at Mhow in Malwa, and is yet I believe unexhausted.

The obstructions of the human viscera so common in Malwa and Nimaur, I attribute to the action of the lime thus held in solution by the water. Tufa water is a well known poison in Italy. It saps the digestion, and causes gradual decay without any perceptible violence. The Italians observing this, fancy that it petrifies the vitals.

But one of the most remarkable examples of the action of water upon lime is observable in the mausoleum of Hoshungh Shah Ghorie, in Maandoo, Malwa. This building is faced within and without with a coarse granulated limestone from the Nerbudda, passing current in those parts for marble. From long neglect, Peepul and Dhamun trees have penetrated with their finer roots the substance of the dome, so that water filters through copiously during the monsoon, and, being preserved in small cavities, continues to drop down, long afterwards. This water in its passage through the mortar of the roof, takes up a certain quantity of lime, which it again deposits in the interior lining of the dome in long stalactitic pendants.

This fact was observed in the days of Ferishta the historian, for he says regarding it, (I quote from memory)—"People who are rather devout than learned, think that the very marble weeps above the tomb of Hoshungh Shah. But we, who are above such puerilities, easily comprehend, how wind penetrating into the substance of the stone becomes there condensed into water."

4, *Harrington Street*, 13*th March*, 1845. J. Abbott.

Note.—The large masses are from confluent strata, below Allahabad. These strata from three to five feet thick are encrusted above with such large loose masses as these. One, however, is part of a *slab* of confluent Kunker, broken by me.—J. A.

An account of the Early Abdalees. By Major R. Leech, C.B., *Late Political Agent, Candahar.*

Preface.

In Nyamatulla's History of the Afghans, by Dorn, Avdal the son of Tareen, the son of Sharkhbun, the son of Sarbanni, the son of Pathan, is said to have had two brothers, Toor and Aspin; and three sons, Barik, Popal and Ali. Dorn in a note (38) on the authority of the Khulassat Ulansat, however, gives Abdal two sons, Firak* and Isa. Firak had three sons, Popal, Barek and Alekko;† and Isa had five sons, Alizye,‡ Turzye, (Noorzye of Elphinstone,) Ishakzye, Makoo and Khogani, which latter are called collectively Panjpai.§

Again Malcolm, in his History of Persia, on the authority of a native historian of no note, apparently a Barikzye writing for Persian readers, attributes the rise of Sado,‖ the progenitor of the royal house of the Sadozyes, to the favor of a king of Persia, Shah Abbas the Great, (entitled by the Persians the Beatified¶) obtained on a visit to the Persian court to complain of the tyranny and extortions exercised and committed by a Persian Governor of Western Afghanistan. When about to return to his native land, the king conferred on him the title and privileges of a "Speen Jeerak" (white beard,) over the Afghans, including the power of life and death over them all, with the exception of the Barikzyes, and declared his person and the persons of his descendants sacred.**

It is even related by the Persians how Sado served for some time in the disguise of a groom in the royal stables; and having been promoted to the charge of one of the king's favorite horses, how he attracted the

* Known to the Afghans as Zeerak, as are the descendants of his three sons.

† His tomb is said to be at Neecharah in Beelochistan.

‡ Alizye is not the name of the son, which is Ali, but of his descendants; Zye being the Persian corruption of Zo'e, which in Pushtoo means a son.

§ Panjpai, though literally meaning five feet or five supports, is often applied to more than five subdivisions of a tribe.

‖ Sado is still a common name among the Afghans.

¶ Jannat Makan.

** Which they continued to be until the murder of Shah Shuja-ul-Mulk at Cabool, in April 1842.

notice of Majesty by the striking effects of his assiduity in grooming.

Finally, in the History of India, Shah, an Abdalee Governor of Herat, is mentioned; and as these three items compose all the information which to my knowledge is possessed at the present day of the Early Abdalees, the following few pages have been compiled to supply much that is deficient, chiefly from a manuscript procured in Afghanistan, a second copy of which I never met with, and partly from accounts written at my request, and from enquiries made from time to time during a continued residence of five years in Afghanistan.

As the information now furnished was not possessed by the late Shah Shuja, I am in hopes it may not elsewhere be considered stale.

The following few prefatory "Remarks on the Origin of the Afghans," will not perhaps be thought misplaced, coming next and before treating of the Abdalees.

Much has been written on the descent of the Afghans. They believe themselves to be descended from king Saul. There are some circumstances against, and some in favour, of this belief.

Those against, are—

1st. They have among their predecessors no Jewish names except that of Kais, the Kish of Scripture (1 Samuel, chap. ix. verse 1,) who was according to some the first Afghan who believed in Mahommed, and in consequence received the title of Abdu Rasheed; the Jewish names now common among them being gleaned from the Kuran.

2nd. They have no vestige of the festival of Purim instituted by Esther, (chap. ix. verse 28.)

Those in favour, are—

1st. Contrary to the precepts of the Kuran, they do not permit a widow to marry any but the heirs of her husband, and the Jews did not allow a virgin to marry out of the tribe, (Numbers, chap. xxxvi. verse 8,) or a widow any but first her brother-in-law, (Deuteronomy, chap. xxv. verse 5). The heir however among the Afghans, in case of his not proposing for the widow, is not reduced to the alternative described in the 9th verse of the same chapter.

2nd. They do not allow daughters a portion of inheritance *with* the sons. Likewise did not the Jews at one time, if we judge by inference from Numbers, chap. xxvii. verse 8.

They have a custom alike repugnant to the Jewish as well as to the Mahommedan creed, common in Wales, where it is called "bundling." The Afghans call it "Namzad-bazee,"* or "betrothal game."

Khaja Nyamatulla, in his History of the Afghans, says that David swore to Saul, (1 Samuel, chap. xxiv. verses 21 and 22) that on Saul's death two of his wives were with child, one bare Berkia, and the other Irmia. The son of Irmia was Afkana, and the son of Berkia, Asif.

Sir W. Jones says, Saul had two sons, one called Berkia and the other Irmia, who served David faithfully, and were beloved by him. The son of Berkia was called Afghan, and the son of Irmia, Usbee.

Neither of these accounts agrees with the Scripture. The name of "Elkanah" is the only one occurring in the Books of Samuel, Kings, or Chronicles, in the least resembling Afghanah or Afkanah; and although it cannot by any Persian rule be corrupted from Elkanah, yet we find the name Hul, (Genesis, chap. x. verse 32,) corrupted into the Persian Hood.

Asaph (Asif,) the son of Berechiah (Berkia,) is mentioned; 1 Chronicles, chap. iv. verse 17; and Berechiah and Elkanah in the 23rd verse of the same chapter.

Berachah, Irmia (Jeremiah,) and Elkanah as connected with Saul, are mentioned, 1 Chronicles, chap. xii. verses 3, 4 and 8.

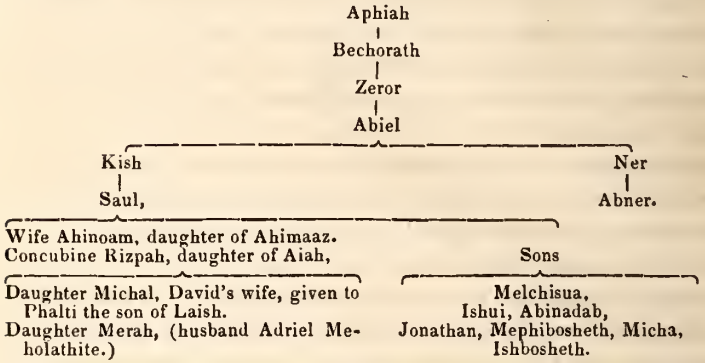
If we look upon Kais as a progenitor of the Afghans, and suppose that they increased in the same manner that the children of Israel did, (viz. at the rate of 2,100 for every year,) and also allow Kais to have lived in the time of Mahommed, then at the time that Elphinstone wrote, the Afghans should have amounted to 2,500,000. Elphinstone estimates them at 4,300,000. This would by the same calculation refer the progenitor of the Afghans back to about the time of Alexander.

If again Afghan, a grandson of Saul, was their progenitor in Elphinstone's time, by the same calculation they should have amounted to about 5,700,000, including the Afghans of Hindustan.

* This is allowed after the "Ijab kabool," formerly asking in marriage and accepting before witnesses, but before the *nika* or marriage ceremony, being the blessing of the Mulla. A settlement also being first fixed before the Mulla of the parish.

Sheer-bhá or "price of milk," is sometimes given to the mother of the daughter if a widow.

Among the descendants of Saul mentioned in the Scripture, as will be seen from the following, no name occurs approaching Elkanah or Afghanah.



Elopement also takes place among the Afghans, and the clan in which the couple take refuge consider it a point of honor not to give them up to the tribe of the father. Arbitrators adjudge seven girls to be given in exchange, one actually mounted on horseback, and two others are valued at 100 Candahar rupees each; half is paid in ready money, and half in goods, a matchlock, a sword and a gonee or bag of grain, being each calculated at a Tuman of twenty rupees.

They (many tribes) divide their lands according to "Orbale" or fire-sides, and bachelors get nothing but their own zarkhureed or purchased lands. The tribe of Shimalzai Ghiljyes say, that their tribe was once so numerous, that by each man subscribing a bush of brushwood (used for fire-wood,) a couple was set up in the tribe. This subscription is called "Baspand."

On the 3rd November 1841, a widow, the daughter of Ashraf a Baeezye Hotak, complained to me as political agent at Kalat-i-Ghiljye, that her daughter had been engaged to one Ghafoor Bahlol-khel Julalgai Tokhee, a khoon-kash or bleeder by profession, for the last fourteen years; for the last eleven of which he had not been heard of, and was therefore to be considered dead. She therefore wanted his heir (a brother) to dissolve the contract, take her himself off her hands to what was now become her tribe, or support her while for a further period she waited for her intended.

Tareen, the son of Sharkhboon (alias Sharafudeen,) the son of Surbannee, the son of Kais (Kish Abdu Rasheed, and Pathan) is said to have had three sons; one, whose complexion was dark, he called Tor (black,) another, whose complexion was fair, he named 'Speen (white,) and the third, he called Abdal.

Abdal, pronounced Oudle by the Toran Ghiljyes, is the title of a grade of Fakeers, vide Hasan Abdal, whose shrine is in Putwar (the country between the Indus and Jhelum) in the Panjab. The other degrees being Ghous, Kutb, and Majzoob, or Kalandar.

Tor had four sons, Malmoonee, Gundaree, Sekee and Baboo, and some say also a daughter, Kakee.

Malmoonee had two sons, Haroon and Alee.

'Speen, the son of Tareen, had four sons, Dur, (Duver, Dabar) Suleman-lagh, Tam and Opchee, (Adhami).

Tor and 'Speen were of one mother, and Abdal of a separate one.

When Tareen was well advanced in years, Tor and 'Speen had grown up, but Abdal was still a boy. One of Tareen's wives one day observed to him, that he had got old, and it was better that during his lifetime he should nominate as his successor in the chiefship his most promising son, and himself seek retirement, and pass his time in the service of God.

Of this, Tareen approved. Tor and 'Speen each hoped the lot would fall on him, and their mother's wishes were for Tor, her first-born. 'Speen was annoyed at this prospect, expressed his annoyance, and advanced his own claims. The mother of Abdal with great humility and modesty brought forward her son's claims, which were, that notwithstanding his youth he possessed more noble qualities than either of his brothers. Tor and 'Speen were both annoyed at this, and said, "Our young brother is no more fit to rule than our old father." One day a holy Sayad who had given up the world arrived, and Tareen referred the choice to him, saying himself that he had a foreboding that Abdal would be chosen. The Sayad after being some time absorbed in thought raised his head, and after regarding all three, said—"The third is the appointed chief; and although Tor will do everything to oppose him, he shall not succeed; 'Speen is no way entitled to the chiefship." (That is, neither by primogeniture or promising talents.)

The Sayad then told Tareen to confer the Dastar (turban) on his youngest son, and the chiefship would remain for generations in his

house. He also told Tor and 'Speen, that it would be for their good to obey Abdal.

Tor made many protests and objections; 'Speen silently took his leave. Tareen then placed the dastar on Abdal, and called for a blessing on him. He at last grew up, and disclosed all the qualities his mother and the Sayad had seen in promise. Tor and 'Speen were always called Tareens, and their descendants are now found in the district of Pishing, in the province of Candahar. Abdal lived 105 years, and his descendants were called after him "Abdalees" and not Tareens. He had two sons, Razad and Suleman. The Maghzan-ul-Afghanee says, one son called Jeer, others say Eesa.

When Abdal was advanced in years he sent for his son Razad, and appointed him his successor after giving him the following parting advice: "Do not forget your God, and conduct your public and private life accordingly. Treat with respect the tribe of Sarbannees, Sayads and learned and devout men; support and provide for your relations, and treat your subjects with kindness." That is to say, have a fair speech and a fat sheep for them, the grand secret of Afghan popularity.

Razad had three sons, Eesa, Alee and Ado. The first named was the youngest, and the two elder lived the life of Dervishes. Razad before his death appointed Eesa his successor, and his choice was confirmed by all the Sarbannees. Razad lived to the age of 120 years, having seen his descendants to the third generation.

Eesa had three sons, Meerak, Suleman alias Zeerak, (from his being forward of his age), and Noor. Eesa on his death approaching, collected, according to the custom of that time, the whole of his tribe and descendants, and appointed Zeerak, although his second son, his successor. Every one at once agreed but Meerak; who at last also did, after his father assured him that his choice was guided in a dream from heaven. Eesa lived 140 years. Zeerak had four sons, Barak, Alaho, Mase and Popal.

When Zeerak reached the age of 120, he called his descendants and tribe together, and requested their opinion regarding who ought to be his successor. They all pointed to Barak, and his father accordingly confirmed him, and he carried on the chiefship fifteen years during his father's life.

It was the custom of the tribe to change their encampment at different seasons, and every one was obliged to take his own baggage and

property to the new ground. It so occurred that in one of these emigrations, Zeerak who from old age had become quite decrepit, was left behind.*

The four brothers, according to custom, returned to the old encampment to see that nothing was forgotten. News was brought that Zeerak had been left behind, being unable to move. Barak first arrived where his father was lying. Turning his horse's head towards him without dismounting, he abused him, saying, "Are you not dead yet, that I may be no longer troubled with you?"

Alako then saw him, and said, "Oh son of Adam, would that you were dead, and ceased to trouble us!" And then passed on, as had Barak. Mase next came, and, seeing his father, dismounted, and ordered one of his people to mount him on a horse and conduct him to the new encampment. Zeerak pleaded that he was unable to sit on a horse. Mase in a passion gave the old man a kick, saying to his attendant, "Let the old brute lie there to be devoured by wild beasts and birds."

At last came Popal, who immediately dismounted, and, taking Zeerak's head on his lap, brushed the dirt off his venerable face, and shed tears, and said, "Would to God that I had never been born, that I should live to see you, my father, in this plight." He then lifted up his father with great care, and, carrying him on his back, ordered his people to convey the baggage on ahead, and he would follow with his sacred burden slowly after. On arriving at the new encampment, he ordered suitable food to be drest for his father. When the old man had eaten and was refreshed, he expressed a wish to utter some prayers, to which he begged attention should be paid.

First he said to Barak: "Your fields† will be many, but may you find no favour with God."‡

Regarding Alako he said: "May you never be free from cares and troubles."

To Mase he said: "May one of your houses fall as the other rises."

To Popal he said: "Be your descendants always chiefs and never servants, and may your foot never be out of the stirrup of wealth."

* I witnessed something similar myself in the Ghiljye country in General Nott's advance on Ghuznee and Cabool. In a village that had been hurriedly deserted we found nothing but a cripple.

† "Bar," breadth (of domain.)

‡ "Barkat," luck, good fortune.

He then said, "I have already given, with the advice of the tribe, the chiefship to Barak, and it is no longer in my power, but theirs. But," (turning his eyes and stretching out his hands to heaven,) "may the descendants of Popal be always 'Raises,' and may the descendants of his brothers serve him." He then told Popal to be of good cheer, that the time was near at hand when he should become chief, and that the Sayad who had interceded in the dispute of Tor and 'Speen had appeared to him in a dream, and assured him Popal would be chief. After blessing him, he lived five years.

Six months did not elapse after the tribe had heard this blessing before they left Barak, and gathered round Popal who became chief, and Zeerak saw with his own eyes his prayers answered. Zeerak lived 89 years.

Popal became chief at 25 years of age. He was a very just and popular chief. In his time the descendants of Tareen mustered 30,000. In a revolution among the tribe of Kakers, the chief sought refuge with Popal, who with a force espoused his cause, reinstated his guest, and took hostages from the Kakers. From which time the Kakers never opposed the Popalzyes. He also took hostages from the Baloches and the Hazarahs. He ruled 65 years, and had three sons, Habeeb, Aiyoob and Bago. When his end was approaching, he assembled his tribe and appointed Habeeb, his eldest son, his successor, who lived 52 years. During Aiyoob's lifetime he and his sons lived with Habeeb. On his death, which took place before the other two, Bazo disputed with Habeeb for his having all the descendants of Aiyoob. The tribe interfered, and gave half to each.

Habeeb had four sons, Ismail, Hasan, Bame and Aboosaieed. The two former were much older than the two latter.

The daughter of Bazo was engaged to Bame. On Habeeb feeling his end approaching, he collected his tribe, and told them to nominate his successor. Ismail and Hasan, both canvassed the tribe for votes, and therefore both soon quarrelled. Bazo proposed Ismail, as being the eldest. Hasan would not hear of it. Bazo then proposed Bame, and proposed that he himself should act as regent during his minority. Habeeb agreed to this; Ismail and Aboosaieed would not agree, and separated themselves from the tribe.

Bame was accordingly appointed chief at the age of 15. After which Habeeb lived two years.

Bame lived to the age of 72; and had three sons, Nasrat, Basahma and Kane.

On Bame becoming aged, he neglected to nominate his successor as was the custom; the tribe therefore assembled, and demanded the reason. In reply he said, "I really do not see among my sons one worthy; but if I confess this to the Tor and 'Speen Tareens, they will not allow the chiefship to remain in the house of Abdal. Indeed I have heard from the Tareens that they had no hope in my sons. I will therefore not appoint a successor. I have also dreamt, that none of my sons will be chiefs, but that a grandson, a son of Kane, will be. If on my death any one of my sons be found with anything, he will get the chiefship without any nomination of mine. According to the dream, so it occurred; the sons of Bame did not agree among themselves, and there were separate small chiefs called "Katkhudas,"* except in cases of blood or large general tribe feuds, when they referred to Kane. He lived to the age of 80; and had three sons, Bahlol, Zeenak and Bano. The tribe was for some time much distracted in factions and petty feuds. At last the chief men assembled, and decided, as there was no getting on without a "Rais" or "Sardar," they would appoint Bahlol. During the chiefship of Bahlol, Kane lived 12 years.

Bahlol lived 105 years; and had two sons, Maroof and Alee-khan; (the first time the title of *khan* occurs). Bahlol appointed Maroof at the age of 30 years, his successor. Maroof was very severe in his rule, and had the curses of his tribe: on which account he did not reign more than ten years, and then died of a severe complaint. His heirs in a short time ran through with all the property he left.

Two months after his death, one of his wives bare a son, by name Umar. His father and mother used to visit the Isakzye and Aleezye shrines for fortune for their son; Umar had no property. When Umar was about 14 years of age, the Abdalees of the hills made many seizures of lands, and many disputes and feuds arose in the tribe in consequence. The chiefs at last agreed to appoint Umar, who had now grown up, to divide the lands, and apportion them fairly, and to be their representative in all their communications with the Beglar-begee of

* In the time of the Duranee kings when the Khans received their pay from the treasury, they deducted from every horseman (Sahir) ¼ rupee on account of the Katkhuda, who was an officer appointed to every 100 men to collect them when called for the service of the State.

Candahar. (This implies a Persian rule in that province). When Umar was one year old, Ako Aleezye, a noted person for sanctity in those times, with his son Khalo then 100 years old, and his grandson Mando, then 85 years old, came to the house of Umar's mother; who killed a goat and its kid, which was all she had for them. They in return prayed for her, and told her she would soon gain her heart's desire. Ako told her that he had seen two dreams regarding the child Umar; one was, that he had seen a lion enter the house of Umar, which meant that he would have a son, whose name should be called Asadullah, "Lion of God:" the second dream was, that he saw the house of Asadullah, who should also be called Sado, covered with a hog's skin. The mother of Umar entertained great apprehensions regarding the mention of the unclean beast; but Ako comforted her, by assuring her that the hog's skin meant wealth.

The Afghans (some) pretend to believe that Ako's dream of the hog's skin referred to the alliance formed by a descendant of Soda, (Shah Shuja-ul-Mulk) with the pork-eating English!! who entered Afghanistan with him in the Turkish year of the hog!!! (1839.)

The chiefs in pursuance of their determinaton waited on Umar, taking with them food for their own consumption as they knew the poverty of Umar, and appointed him their chief. His first care was, to settle the land disputes on a basis which ever after remained unshaken.

As chief, he held communication on the part of the tribe with the Beglar-begee of Candahar.

During his time the Barakzyes of the hills rebelled, and maltreated his emissaries sent to make the usual collections, saying, "The chiefship was given to us by our forefather, and Popal took it by force."

Umar immediately collected his force for the reduction of the Barakzyes, in which he succeeded taking hostages from them, as well as from some Noorzyes who bordered on the Barakzyes, and joined in the rebellion. He lived 98 years; and had two sons, Asadullah (Sado) and Saleh.

Another informant, an Aleezye chief says, Sado after being blessed by Ako, who was a disciple of Sakhee Sarwar's, found a treasure, and by means of it gained influence in the tribe. If this story be a fabrication, it at least betrays a knowledge of the Afghan character.

In 1841, there was in Cabool a Salehzye, named Hajee-khan, who said he was the last of his tribe. He and Taizulla-khan of Candahar, now

dead, a brother of my Aleezye informant, were reckoned almost the only men in Afghanistan who possessed a knowledge of Afghan history.

Some say, that Umar was told in a dream by a vision of his forefather Eesa, to name his sons Saleh and Soda. Saleh became the disciple of a saint, gave up the world, and passed his time in austere devotions.

When Umar reached the age of 89, Sado being 25 years old, and Saleh 60, he collected his tribe and informed them that as his end was approaching, he must name a successor. That as for Saleh, he had given up the world, and was in no way adapted for the chiefship. That Sado had been nominated by the Aleezye Fakeers, Ako, Khalo and Mando, and was moreover thought by him the most fit. The tribe immediately confirmed, as did Saleh who, when doing so, spoke these words: "I have five sons; Durkhan, Ibrahim-khan, Bazeed-khan, Maya and Alo, who again have children. Let Sado exempt the whole of my descendants from taxation of every kind as long as the chiefship remains in the house of Sado." This was agreed to by Sado before his father and the tribe.

Umar and Saleh then girt Sado's loins. This is still a custom in Afghanistan. On a king ascending the throne, some saintly character of great fame is sent for, who undoes his own "langootee," and puts it round the waist of the king, who in return invests the saint with a splendid dress of honor. Sado's turban was then put on by Alce, the son of Mando Aleezye, and all the people prayed for his long life and prosperity.

Some time after the accession of Sado, Khaja Khidr and Ismail, grandsons of Neknam, a Barikzye Malik, rebelled against his authority, and refused to admit his "Mahsals," revenue collectors and bailiffs, into their districts; on the plea that their progenitor Barak ruled for fifteen years, and that Popal got the chiefship unjustly, and by boyish blandishments. They agreed to give a sheep or two now and then, according to their ability, but would not agree to the daily demands and constant sending of Mahsals, some of whom they forcibly ejected from their districts. On hearing this, Sado became furious, and collected his force. Other Barikzyes came and begged forgiveness, entreating Sado not to attend to what a few fools or madmen said; and promised themselves to punish their rebellious fellow tribesmen. By this Sado was pacified, and appointing other chiefs, and giving them his countenance, deputed them to punish

the rebels, which they faithfully did. Khaja Khidr being slain, some Kutezyes also evinced a rebellious spirit; and were chastised, and security for their future good behaviour was taken. The other tribes profited by the example. Sado behaved liberally to all who acknowledged his authority, and punished all severely who disobeyed him. He listened to the petitions of the poor, dispensed justice strictly according to the Shara, was pacific in his policy, and protected his subjects. His government was established over the Abdalees on a basis that had never been in a like manner secured by his forefathers.

When at leisure from the Abdalees, he subjugated, partly by conciliation and partly by force, the tribes of Ghiljyes and Hazarahs, in whose disputes he was sole arbitrator. He built several mosques and schools, as well as many works of utility, such as bridges, wells, and roads.

He lived in all 75 years; and had five sons, Khaja Khidr-khan, Moudood-khan, Zafran-khan, Kamran-khan, and Bahadur-khan.

Khaja Khidr-khan and Kamran-khan are said to have been of one mother, and Zafran-khan of a slave girl.

The Bahadur-khels settled in Multan, where and at Dera Ismail-khan and Tak-i-Sarwar-khan, there are some remains.

Muzaffar-khan, governor of Multan, was a Bahadur-khel.

The Kamran-khels were divided into Eesa-khels and Moosa-khels.

Usman-khan, who was Shah Shuja's vizier in 1841, traced his descent as follows, from Kamran, viz.: Usman, the son of Ramatullah, Shah Zeman's vizier, the son of Fatullah, the son of Haroon, the son of Yoosaf, the son of Yakoob, the son of Moosa, the son of Kamran.

Walee Mahammad-khan, another Sadozye of rank at Candahar, who also gave me some information, traced his descent from Kamran, as follows: Walee Mahammad, the son of Abdu Salam-khan, who was a brother of Abdul-khalik-khan, (who rebelled against Shah Zeman), the son of Rahman-khan, the son of Abdullah-khan, (who, according to some, gave his daughter in marriage to Meer Wais Ghiljye, who had two sons by her, Shah Mahmood and Shah Husen, receiving in marriage in return Meer Wais's daughter), the son of Jafar Sultan, (whose residence and control was at Potye-i-Sadozye and Shahr-i-Safa by one account, whose wife named Durkhee gave her daughter Khanzad to Meer Wais's mother for her son), son of Eesa, son of Kamran.

The two first of Sado's sons were the most forward and talented, and the other three were not much noticed either by their father or the tribe, some of whom inclined to Khaja Khidr-khan, and some to Moudood-khan. When Sado grew enfeebled through age, he collected his tribe, and told them to choose among the two. Moudood-khan being the eldest, was elected chief; but Sado remonstrated, saying, "Although Khaja Khidr-khan is the youngest, yet he has more noble qualities than his four brothers. I also saw a dream regarding him, as follows:

"After midnight, an old white-bearded man with a green stick, and a green wrapper round him, made his appearance. The effulgence of his countenance was such, that I fancied a light had been brought into the room. Steadfastly regarding him, I hardly knew whether I was awake or was seeing a dream.

"I started—awoke, and arose, as did my wife; I then enquired from the vision, 'why he had honored my humble house by entering it?' He replied, 'Be joyful, for God will give you a son, whom you must call Khaja Khidr; who shall so excel in every good quality, that men shall be unable fully to sing his deserts.' On asking the vision his name, he evaded the question; I prest him, he at last replied, 'The child is to be called after me.' He then took his departure, and I followed him some paces, when dismissing me he shortly vanished from my sight. On my son's birth, I called him Khaja Khidr. Now although I love all my sons equally, yet, on account of my dream, I incline to think him fittest to be chief."

The Sarbannees however still persisted in their choice of Moudood Khan.

Khaja Khidr-khan then proposed, that the tribe should range themselves on his or his brother's side as they chose. The Sarbannees would not agree to this, saying with great truth, that a division would be prejudicial to the general interests of the tribe. It was finally settled, that Moudood-khan should be chief, and Khaja Khidr-khan his deputy.

During the lifetime of Sado their father, the former delegated all his powers to the latter, and merely retained the name of chief; but on the death of Sado the tribe with one consent transferred the chiefship to Khaja Khidr-khan, who became very popular, being approved of by the saints, and being talented, conciliatory, and liberal.

Khaja Khidr-khan became chief at thirty-five years of age, and ruled forty-seven years. He had two sons, Khudadad Sultan and Sher-khan. This is the first time the title of Sultan occurs. He is known among the Afghans as Sultan Khudakye, who divided the lands of the Abdalees and Ghiljyes at Pul-i-Sangee with Sultan Malakhe Ghiljye.* This title of Sultan, I have reason to suppose, was conferred by Aurangzeb.† Khudadad Sultan, on the death of his father Khaja Khidr-khan, became chief without any opposition from his brother.

He soon afterwards invaded the territory of Jyob, and laid it waste while the inhabitants fled to the hills. On his return, a man of the country and his three children were intercepted in a ravine, unable to flee; when brought before him he immediately ordered them to be killed, although they appeared innocent and godly people.

Pitching his camp near the spot, at night he saw a vision. The four murdered persons appeared, and threatened him with the death he had so unjustly inflicted on them. Terror had taken possession of his soul, when the same vision with the green stick and green garment that had appeared to Sado made his appearance, and, after reproaching him with his tyrannical act, promised to save him, provided he would immediately abdicate in favor of his brother Sher-khan, and act as his deputy. Khudadad Sultan awoke in great dread, and assembling his attendants and followers, renounced the chiefship in favor of Sher-khan, and informed him he had done so by an express courier or "Chapar."

During the chiefship of Khudadad Sultan a friendly communication was sustained with the Beglar-begee of Candahar, but soon after Sher Khan's accession it received a sudden check in the following manner.— The Beglar-begee of Candahar had sent a force towards Foshanj (Pishing) to collect the taxes on land and sheep, called Maldaghees and Sargalye. Having finished their collections, they were returning to Candahar. On arriving at the Kojak Pass they were attacked, defeated, and nearly all slain by the Abdalees: some fled, but were pursued, and, being overtaken, lost their horses and clothes.

* The dispute was regarding the two districts of Omakye and Gwaharye, and is said to have been settled by a shepherd, appealed to by both parties, on the simple principle that Khudakye and Gwaharye sounded well together as did Malakhe and Omakye.

† I have seen the original Rukum of Aurangzeb to Sultan Malakhe, giving him charge of the King's road from Kalat to Karatoo, to keep it clear of the Hazarah robbers.

On the Beglar-begee hearing of this, he wrote to Sher-khan, requesting him to send the culprits to Candahar. Sher-khan made excuses, saying, that Beeloches, Kakers, and other migratory tribes inhabited the neighbourhood of the Kojak, and the real depredators were therefore difficult to discover. The Beglar-begee enraged at this, by way of reprisal, attacked and plundered the Abdalees who inhabited the neighbourhood of Candahar. Sher-khan on hearing this collected his tribe, and both parties arranged themselves for hostilities.

At this time Pishing, Sharabak, Shawl, Harnye, and Mastung were all dependencies of Candahar. On this difference arising, all communication between Candahar and these places was stopt; and on Sher-khan succeeding, which he did, in gaining possession of Shah Safa, a post only nine farsakhs from Candahar, the communication with Kalat-i-Ghiljye, the Ghiljyes, and Hazarahs, was also cut off.

In this dilemma the Beglar-begee wrote for instructions from his master, the king of Persia, who in reply ordered him to look out for some rival chief in the same tribe and patronize him.

The Beglar-begee sought out and found Shah Husen-khan, a cousin of Sher-khan, on whom the king of Persia conferred the title of a Prince-royal, viz. *Meerza*.

Meerza Shah Husen took up his residence at Deh-i-Shekh, and Sher-khan at Shahr-i-Safa, and thus the first division among the Abdalees took place. The tribe often remonstrated with Shah Husen Meerza, and protested against Mogul interference. As he stoutly denied being under Persian influence, he had adherents in the tribe as well as Sher-khan; indeed the Abdalees constantly said they did not care which brother they obeyed so long as the Moguls (Persians) did not interfere.

Jaleel Aleezye was Shah Husen Meerza's right-hand man, and was always deputed by him to Candahar to negotiate with the Beglar-begee. Some years past in this manner. On Jaleel taking his leave after one of his visits to Candahar, the Beglar-begee entrusted him with the following message for his master Shah Husen Meerza: "The king of Persia, my master, has honored you by adopting you as his son, and has conferred on you the princely title of Meerza; you have 30 or 40,000 men. I also have a force, and every day fresh orders come from my master for the destruction of Sher-khan's power: believe me, our delaying any longer can only do us harm at court."

The Ameens of the Chaghatye monarch in Eastern Afghanistan heard of this and reported it to their master, the king of Dehli, and pointed out that Sher-khan was a man of great influence in his tribe who had excited the wrath of the king of Persia by opposing his cousin Shah Husen Meerza, who was supported by that monarch, and was on that account disposed to receive the protection of the king of India, which they strongly recommended should be extended to him.

This recommendation brought letters of encouragement, and the title of *Shahzadah* for Sher-khan from the Emperor of Delhi, who enjoined the Soobhadar of Cabool and Hakim of Ghuznee to afford Sher-khan assistance whenever he required it.

On receiving these honors the power of Sher-khan increased, and Meerza Shah Husen's declined in proportion. This was to be expected, for the Afghans would naturally prefer the Sunnee king of Delhi to the Sheeah king of Persia: and doubtlessly Sher-khan immediately indented on the Governors of Cabool and Ghuznee for dresses of honor for his adherents, and created a rival of popularity by this means also in the tribe.

Jaleel Aleezye was immediately despatched with this intelligence to the Beglar-begee of Candahar, who reported it to his master the king of Persia. In reply, a horse and a dress of honor were sent for Shah Husen Meerza, and dresses of honor and letters of encouragement for his adherents were despatched by the hands of Jaleel Aleezye, who was also bearer of a message to Shah Husen Meerza from the Beglar-begee, which was, that the Beglar-begee had much wished to come himself to visit the Abdalee chief, but was prevented by the unquiet state of some of his districts, and hoped that he would be able to come to Candahar. An interview had often before been talked of, but Shah Husen Meerza always, when invited to Candahar, excused himself, pointing out the advantages his rival, Sher-khan, would gain in his absence from the tribe. This time, however, flattered by the receipt of the king of Persia's presents, and burning with jealousy at the increasing power of his rival, he consented. The tribe, hearing of his intention, assembled, and said, "You may go to Candahar of course, if you like; but we warn you that something may take place to our detriment, such as a dispute or a quarrel with the Moguls." Shah Husen Meerza, notwithstanding the warning, set out for Candahar; and appeared at the Beglar-begee's durbar.

Jaleel Aleezye always stood with his hands joined in the presence of Shah Husen Meerza, his master; but as he was Wakeel at Candahar, the Beglar-begee allowed him always to sit, as he did on the present occasion.

Jaleel was a handsome and clever-spoken man; Shah Husen Meerza was slow-speaking, black, and short.

Jaleel constantly introduced his own opinions in the conversation, and was told by signs to be quiet. These had no effect, and he more than once interrupted what his master was saying; took the words out of his mouth, and finished his sentence for him. Shah Husen Meerza, unable to contain himself, at last said, "Slave of low origin, what does this disrespectful behaviour, and these interruptions mean?"

Jaleel foolishly allowed himself to reply, "A slave is always known by his color."

Quick as thought Shah Husen drew his dagger, and sheathed it in the body of Jaleel, who expired immediately, his entrails protruding on the carpet. On witnessing this tragedy, the Beglar-begee and whole court rose hastily, partly in alarm and partly in rage. Shah Husen Meerza no sooner observed this than throwing away his dagger, he said, "Be not concerned; that slave has only paid the forfeit of his impertinence."

As he was the adopted son of the king of Persia, they contented themselves with putting him in restraint; while they reported the tragedy, and waited for instructions.

A decision arrived from the king of Persia to the effect, that Shah Husen Meerza was quite right in killing his slave, if he offended. Fresh dresses of honor were despatched with a letter of encouragement to the prisoner, who was ordered to be released immediately, and sent to his government. This favor, however, came too late; the mischief had been done already, for during Shah Husen's confinement the whole tribe of Abdalees had gone over to Sher-khan, and acknowledged his authority.

Meerza Shah Husen therefore, on obtaining his release, went direct to Sher-khan, and, acknowledging his authority, expressed his determination of proceeding to Hindustan; which he soon after carried into effect, leaving Sher-khan in absolute undisputed possession of the chiefship.

When the Beglar-begee heard of this he wrote to the king of Persia, who sent a letter to Sher-khan, couched in these words: "There is bro-

therhood between my house and that of the Koraganee; if you have been made a Shahzadah by the king of Delhi, I also adopt you as my son, and allow you full authority over your own tribe independent of the Beglar-begee; but if he is attacked, or otherwise requires your assistance, give it him."

Sher-khan accepted these honors, and appointed as naiks or deputies, Badal Baneezye, and Meer, son of Mubarak, son of Jalaludeen Alakozye.

The Beglar-begee at intervals sent people to make complimentary enquiries after Sher-khan's health, and requested that the deputies Badal and Meer should attend on him at Candahar.

Meer Alakozye was alone sent, and directed, if enquiries were made for Badal, to make an excuse that he was ill, and to say that he would make his appearance on his recovery; or if that should be retarded, some one should be sent in his stead. Meer arrived, and had an interview with the Beglar-begee, whom he found preparing a force to collect the revenue of the districts of Shorabak, Pishing, and Huruge, viâ the Kojak Pass.

Meer, being presented with a dress of honor and a horse, sent a small detachment of his own men in company with the Moghul troops, who saw them safe across the Pass, and overawed the above districts into payment of revenue, for which assistance he received further khiluts and his leave.

A difficulty however arose, which was, to get the Persian detachment with their collections across the Pass on their return to Candahar.

Sher-khan was therefore again written to, who this time despatched Badal Baneezye with an introduction, which, after the detachment had been by him seen safe across the Kojak, procured for him a dress of honor and two horses.

He received his leave and charge of seven horses with golden trappings, and various pieces of rich Persian stuffs for his master Sher-khan, which had been sent by the king of Persia with an encouraging letter.

Sher-khan became chief at thirty-two years of age, and lived in all sixty-five years; and had one son, named Sarmast-khan.

When he was twenty years of age, his father Sher-khan being much addicted to the chase, went one Friday out hunting, and had a fall from his horse; his attendants taking him home senseless. On opening his eyes, and seeing Sarmast-khan, he desired Bakhtyar-khan,

grandson of Saleh, might be sent for. On his arrival, he thus made known his wishes to the couple: "My recovery is out of the question: therefore, as Sarmast-khan is but a boy, I appoint you, Bakhtyar-khan, his guardian; let him follow my example. And do you, Sarmast, attend to the advice of Bakhtyar-khan, and appoint him your deputy should you ever be absent from your tribe; and, remember, be liberal. I have spent my life as heart could desire; I have nothing to regret not having done. I have so behaved to the tribe, foes, and friends, that they will never forget me. If a friend and a foe quarrelled in my presence, I never decided so, that favor if existing should appear; and at other proper times, I have so treated my friend, that the people flocked to him; so that whenever a foe appeared, so many friends arose for me, that he became powerless. If any one in the tribe belied another, or aspersed his character, I never publicly exposed either, or lowered a friend in the eyes of the people."

Sher-khan died three days after this. Sarmast-khan faithfully followed the precepts his father had taught him. He lived in all 50 years. He had three sons, Doulat-khan, and two others whose names are not known, as they died without issue.

On the death of Sarmast-khan, as Doulat-khan was quite a boy, Haiyat Sultan succeeded to the chiefship of the tribe. He was a cousin of Sarmast-khan's. He also conducted all communications with the Beglar-begee of Candahar.

This latter once made a feast, and invited to it all the Afghan chiefs, Kat-khudahs and Sar-khels, to meet his own Moghul Sardars. Wine was introduced, and ceremony thrown aside. Haiyat Sultan and the other Afghans were induced to join in the revelry, and, as they were not so accustomed to the juice of the grape as their entertainers, soon got intoxicated. From the praises of wine it was not long before the company entered upon the praises of woman; each party, of course, becoming the champions of its own countrywomen. At last proposals for intermarriages were made, and agreed to by both parties. Seven Afghan daughters were betrothed by name to as many of the Persian officers, and vice versâ, and dresses of honor were given to their Afghan fathers-in-law that were to be. Next morning Haiyat Sultan on getting sober, became painfully aware how he and his companions had committed themselves, and was at a loss how to leave Candahar. In this dilemma

Mubarik, one of the Afghan Kat-khudahs, a man of experience and expedients, suggested that the Persians should be told that it was their custom that the bridegrooms should visit the houses of the brides,* the consent of whose relations would also be first required.

The Afghan chiefs thus got their leave, and they returned to their tribe, accompanied by some of their would-be sons-in-law, and several matrons to attend the brides, and bring them to Candahar.

On the news of these mutual engagements spreading, the whole of the Sarbannees and Abdalees besieged Haiyat Sultan on his return, and a council was held.

Doulat-khan had by this time grown up, and had his seat in all the councils (*pŭjahs.*) On the present occasion, after paying all due deference to his uncle, he proposed to try the Moghuls to suggest they should first give their daughters to the Afghans. This was proposed accordingly. The Moghuls however replied, that their daughters were far off at Ispahan, while those of the Afghans were close at hand, and could be according to agreement married, while theirs were being sent for. The rude Afghan chiefs were led by this to believe, that the intentions of the Moghuls were not honorable; and they called on Haiyat Sultan, who had brought them into this scrape, to get them out of it.

Haiyat Sultan saying, as he had been for a long time friends with the Beglar-begee he could not give an unbiased opinion, rose from the council and sought his private apartment, deputing Doulat-khan to act in his stead.

Doulat-khan's speech was a true Afghan one. "If," said he, "you take my advice, you will sacrifice four of these Sheeah Moghuls to our four Sunnee Yars, (four first caliphs, excluding Alee the fifth, the favorite of the Sheeahs,) as a punishment for their presumption; and hand the matrons over to Masoor Baneezye, who will provide for them." This method of cutting the gordian knot of their difficulties being highly approved of by the assembled simple, hospitable, and brave chiefs, the throats of four of their principal guests were cut.

On this treachery reaching the Beglar-begee, he wrote reproaching Haiyat Sultan, who excused himself, and laid the blame on Doulat-khan. The Persian governor then challenged Haiyat Sultan to prove his non-

*When they are very high in rank, they send their swords instead, to represent their persons.

participation in this foul massacre by coming to make friends with him again at Candahar. This he excused himself from doing, saying he would not be permitted to do so by the tribe.

All retribution or apology thus being withheld, the Beglar-begee collected a force under one of his chiefs, named Farrukh, and despatched it against the Afghans, and a great battle was fought at Yaggak, in which the Persians were defeated, and their commander killed. The Beglar-begee believing the old saying, that " the painter's second drawing is the best," sent another force, before the Afghans thought he would have heart or power to collect it, and fully retrieved the former defeat, and effectually punished the Afghans' perfidy. Haiyat Sultan retired to Hindustan. He had two sons, Abdulla-khan and Khan Mahammad-khan. Abdulla-khan had four sons, Allaiyar, Sadullah, Khan Mahammad, and Alee.

Khan Mahammad-khan had two sons; Raheem-khan, who fled to the Deccan from Ahmad Shah, and was not after heard of, and Akbar Shah, blinded by Ahmad Shah, whose son was Khan-i-khanan. During Doulat-khan's time the Beglar-begee was recalled by the court of Persia, and another governor sent in his stead, with whom Attal and Izzat Sadozyes and Meer Wais-khan Ghilgye intrigued against Doulat-khan, while they pretended to be his friends. Their object was to set aside Doulat-khan. The two Sadozyes becoming chiefs of the Abdalees and Meer Wais-khan of the Ghiljyes; having at last succeeded in imbuing the mind of Doulat-khan with suspicion of the Beglar-begee, and in incensing the latter against him.

Doulat-khan was suddenly besieged in a small fort on the outskirts of his tribe, taken prisoner, and with his son Nazar-khan, and favourite and confidential slave, Fakeer, put to death. His tomb is in the Raza-bagh at Kohak near Candahar. He left two sons, Rustam-khan and Mahammad Zuman-khan. Nazar-khan is said to have been Doulat's brother by some.

On this occurrence Rustam-khan sought the tribe, and gained such influence there as to make the Beglar-begee anxious to secure his friendship. He therefore wrote, proposing that the past should be buried in oblivion, and that his two principal advisers, Sarwar-khan Baneezye, the son of Bukhtyar-khan, and Katak Kootezye Alakozye, should be despatched to Candahar to arrange the terms of friendship and alliance. They were despatched, and, on their return with dresses of honor, gave

such a favourable account of their reception as to induce their master to accept the invitation of the Beglar-begee, of which they were the bearers.

Rustam-khan was confirmed in the chiefship by the king of Persia; he kept on such good terms with the governor, and was held in such high estimation by the whole Moghul force, that many swore by his head.

A rebellion broke out among the Beeloches, and, as was usual, Rustam-khan was called on to despatch a small Afghan detachment with the Moghul troops, which latter were defeated. This was taken advantage of by Hajee Meer Wais-khan Ghiljaee, and by Attal-khan and Izzat-khan Sadozyes, who were Rustam's rivals at court; and the Beglar-begee was by them persuaded that the defeat of the Moghul troops had been arranged between the rebels and the Afghan chief. Rustam-khan was therefore coaxed to court, and thrown in prison. He was, after suffering great privations, released, on his three rivals promising to murder him.

Hajee Meer Wais excused himself from being the executioner, on the plea, that should his Sadozye co-adjutors commit the deed, a bloody feud in that tribe would be the result, which would be favorable to the Persian power.

Izzat was also found to have some spark of patriotism left, and therefore Attal became the murderer, some say, partly in revenge for the death of his uncle, Jafar Sultan.

Rustam-khan only ruled four years, and left no issue. His tomb is also in the Razabagh, at Kohak, near Candahar. Mahammad Zaman-khan was at this time in Kirman.

Hajee Meer Wais-khan was the son-in-law of Jafar Sultan Sadozye Kamran-khelee. Doulat-khan had Meer Wais' father as a hostage. In Jafar Sultan's time his wife, by name Durkhee, gave her daughter, Khanzad, to Meer Wais, and it is said that one of the objects of Hajee Meer-khan's visit to Ispahan was to get the chiefship of the Abdalees for his brother-in-law.

In the insurrection organized by Hajee Meer Wais-khan, after his return from Persia and Mecca, in which the Beglar-begee, Shahnawaz-khan, was murdered. The Abdalees cordially co-operated in the understanding that, if successful, they were to share power, lands, treasures, &c.

equally with the Ghiljyes. This latter party, however, played them false, and the Abdalees took arms. A great battle was fought between the rival tribes near Algabad in the Dasht-i-Boree, in which the Ghiljyes were victorious, and the Abdalees, under Sadulla-khan Sadozye, retired to Herat, of which they became masters by profiting by the dissensions inside. Others say, that one Allaiyar-khan was the Sadozye chief, who got possession of the citadel of Herat by disguising some fifty followers as merchants with a caravan.

Shah Mahmood Ghiljye, the son and successor of Meer Wais, it is said, made an attempt to take Herat from the Abdalees, and for that purpose advanced to Nawah on the Helmand, where he was met by the Herat force under Sadulla. A battle ensued, in which the latter was killed, and Shah Mahmood returned to Candahar. He next year again advanced on Herat, as far as Giranee, on the Farrah Rod. Here he was met by a deputation from Herat sent by Sadulla's mother, who was a sister of his mother, * which induced him to change his plans and to proceed viâ Seistan to Kirmam.

By the other account Allaiyar-khan is said, after getting possession of Herat, to have put his brother Zuman-khan and all his sons to death, and that Ahmad alone escaped, by being an infant in the cradle. His mother, who was an Alakozye, took him to Hajee Ismail Aleezye, the Beglar-begee of Herat, and, by promising him her daughter for his son, got him to intercede with Allaiyar to spare the infant's life. Hajee Ismail shewed the child to his Peer, a spiritual father, Mulla Usman, an Alakozye Akhund, who foretold that he would be favoured of God.

On Ahmad growing up, many of the Abdalees flocked to him, which causing Allaiyar uneasiness, he had them all put to death: and Hajee Ismail had his protégé conveyed to the neighbourhood of Subzwar and Farrah, and there kept concealed. Allaiyar-khan's wrath was thus turned on the Hajee whom he was waiting the first favorable opportunity of killing, when Nadir Shah appeared in the field and attracted the attention of all Khorasan.† Mulla Usman was called upon to foretell events; which

* Khanzad was Mahmood's mother, and Sadulla's mother must by this have been a second daughter of Durkhee and Jafar Sultan.

† My Aleezye informant makes Allaiyar the governor of Herat about this time, while a descendant of Shah Husen assures me that his name was Sadulla. Again, that Mahammad Zuman-khan was once governor of Herat there is no doubt, his tomb is now there. In the History of Persia, Mahammad-khan, the governor of Herat, is mentioned as having been sent by the king of Persia with overtures to Meer Wais on

he did, by assuring them that 6,000 Afghans would be led into captivity by the Persian conqueror, and that this visitation of the Almighty's wrath was caused by the cries of one poor Noorzye shepherdess, who in vain entreated her harsh mistress to give her in-door work, instead of the hunger and cold of the bleak mountains. In the course of time, Nadir Shah appeared before Herat, which he besieged for fourteen months, leading into captivity 6,000 Afghans, men and women, which he distributed throughout the town of Persia, employing the boldest and most able-bodied in his army.

Their chiefs at this time were Ghanee-khan Alakozye; and Noor Mahammad-khan Aleezye.

Nadir Shah had been besieging Daghistan for eleven months without success, and his temper became accordingly soured, when one day a shot from the besieged ramparts was so admirably thrown as to fill the dishes Nadir Shah was dining off in his tent with dust. This gave the climax to his wrath; and he ordered the chiefs of the captive Abdalees to be summoned. Among them, besides the two above-mentioned, were Hajee Jamal-khan Mahammadzye, and Janoo and Manoo-khans Noorzyes. Nadir Shah informed them, swearing by Sultan Alee Moosa, that they would all be massacred should they fail in becoming masters of the fortress within twenty-four hours.

The Abdalees seeing their case desperate, swore to die like men, and sent a communication to the besieged, desiring them to evacuate the fortress within six hours, which, being of course laughed at, the Abdalees prepared for the attack. This was so sudden and so desperate—the Abdalees still passing on over the dead bodies of 600 of their brethren—as to inspire the besieged with a sudden panic, which did not subside until they had gained the outside of the fort in their retreat. Nadir Shah was so pleased, that he ordered the Abdalees to ask any favor of him. "Revenge us on the Ghiljyes of Candahar, and give us their lands," was their first request, and "release our captives," was their second. Both were granted, and orders were given to collect the Af-

his insurrection. Again, it is mentioned that in the time of Shah Mahmood Ghiljye of Candahar, the Uzbecks invaded Khorasan, and were joined by Azadullah (Sadulla?) Duranee chief of the Hazarajat, who had been formerly dependent on Herat, but who had been estranged by an insult offered him by the governor of Herat, Mahammad Zuman-khan. A Persian force of 30,000 men advanced to Herat, and defeated the Uzbecks; but was in its turn defeated by the Afghans, 15,000 in number, under Azadulla, who retained possession of Herat and its dependencies.

ghans from all parts of Persia; wives were restored to their husbands, and daughters to their fathers: only one Aleezye was left to mourn a wife, who in his grief sought his chief, Noor Mahammad-khan, who had the title of Meer-i-Afghan. Every diligence was made in searching for her, and she was at last discovered to be in the harem of Nadir's own son. Noor Mahammad, emboldened by the past favors of that monarch, represented the case to Nadir Shah at his next interview, who thought to keep his word, and at the same time avoid the disgrace of a lady who had once entered Nadir's harem leaving it, by promising that she should accompany her former husband back to his country, if she should be so inclined; calculating that the delicate food and rich attire, &c. &c. that she had been accustomed to in his harem would disgust her with her rough and greasy husband. In this Nadir was disappointed, for in the interview allowed the couple on the Afghan appealing to her to enable him to hold up his head again among his "Siyal," (equals in society,) she decided for returning home. This the king allowed her to do with all the goods and chattels she had become possessed of.

On Nadir Shah's marching on Candahar, Allaiyar opposed him at Sabzwar, and was killed.

Hajee Ismail was sent for by Nadir, and ordered to bring Zaman-khan's son to the presence. This he did after Nadir had sworn that he would not injure him.

It is said, that on Ahmad-khan first making his appearance before Nadir Shah, the latter was so forcibly struck with a presentiment that he would be king, as to have required an oath from him that he would not molest his descendants.

He ordered him to be in constant attendance, and conferred on him a golden staff set with jewels.

On Nadir Shah taking Candahar, the Afghans reminded him of his promise regarding the Ghiljye lands. Ghanee-khan Alakozye got the rich valley of the Arghandah for himself and tribe, while Noor Mahammad-khan secured the fertile valley of Zemindawer for his Aleezyes. The Barikzyes of the present day in pointing to the high and dry lands that fell to their lot, bitterly regret that they were at that time not properly represented at Nadir's court.*

* Nadir Shah divided Candahar into 3000 kulbahs, which he called Arbabee: each kulbah containing 100 tanabs, and each tanab being 60 yards square. From each kulbah of these Tavelee lands sown by four kharwars (40 maunds) seed, he required

Ahmad-khan accompanied Nadir Shah in all his campaigns, and was present in camp at the time of that monarch's murder. How he succeeded in becoming Ahmad Shah by means of one of Nadir Shah's cash remittances from Hindustan that fell into his hands, belongs to his own history, and nothing is left to note but the patriotism of Nadir's old Afghan officers.

On their being summoned to the upstart court of Ahmad Shah, to give their advice for the consolidation of the rising Duranee* power, "First," was their reply, "raise a body of 12,000 foreign Persian troops as your ghulam-khanahs (slaves of your will,) as a check upon your Duranees; and, secondly, have *us* put to death, as we are too powerful, and stand in your way."

Their advice in both cases was taken by Ahmad Shah!

two horsemen. He gave the outskirt lands in Tavel to the Duranees, and the rich suburb lands he assessed at one-tenth of the produce, after the following unfair experiment in the lands under the walls of Candahar, which had on account of preceding anarchy lain fallow for three years, whereas the land was always deemed and termed "doo áish," that is, two kulbahs were alternately cultivated year about. He appointed his own men to sow one kulbah with five kharwars of seed after ploughing it seven times; and because the outturn was 100 kharwars, he unfairly made a fixed settlement of one-tenth, being ten kharwars grain, and ten kharwars straw (bhoosah.) The Afghan's hereditary lands are called mouroosee or kosai.

* Ahmad Shah assumed the title of Dur-i-Duran, "pearl of pearls," notwithstanding his Peer, or spiritual adviser, suggested Dur-i-Douran, "pearl of the age."

Proceedings of the Asiatic Society of Bengal, JUNE, 1845.

The stated monthly meeting of the Asiatic Society was held at the Rooms, at ½ past 8 P. M. on Tuesday the 17th June, Charles Huffnagle, Esq. senior member of the Committee of Papers, in the chair.

The proceedings of the May meeting were read, and with a few additions and corrections confirmed.

Read the following list of Books presented, purchased and exchanged during the last month :

Books received for the Meeting of Tuesday, the 17th June, 1845.

Presented.

The Meteorological Register, for April, 1845.

The Oriental Christian Spectator, Nos. 5 and 6, for May and June, 1845.—By the Editor.

The Calcutta Christian Observer, for June, 1845.—By the Editors.

The London, Edinburgh, and Dublin Philosophical Magazine, and Journal of Science, for January, 1845.—By the Editor.

The Edinburgh New Philosophical Journal, October, 1844, to January, 1845.—By the Editor.

Proceedings of the Academy of Natural Sciences of Philadelphia, for March and April, 1844.—By the Academy.

Ditto, ditto, ditto for May and June, 1844.—By the Academy.

An Address to the Students of the Benares College.—By J. Muir, Esq.

Brief Lectures on Mental Philosophy, delivered in Sanskrit.—By J. Muir, Esq.

Annales des Sciences Physiques, et Naturelles D'Agriculture et D'Industrie.—By the Royal Agricultural Society of Lyons, Vol. 6.

Archæologia or Miscellaneous Tracts relating to Antiquity, Vol. XXX.—By the Archæological Society.

Index to Archæologia, from Vol. XVI. to XXX.—By the Archæological Society.

Magnetical and Meteorological Observations.—By the Honorable the Court of Directors.

Prasastiprakásika.—By the author, Krishnolall Deb.

Supplement to the Glossary of Indian Terms.—By H. M. Elliott, Esq. Civil Service, from the Government N. W. P.

Exchanged.

Calcutta Journal of Natural History.
Journal of the Agricultural and Horticultural Society of India.
Journal Asiatique, Vol. VI.
The Athenæum, for March 29th, 1845, and 5th, 12th, and 19th April, 1845.

Purchased.

Mantell's Medals of Creation, Vols. 1 and 2.
The History of Etruria, Part II.
The History of the Reign of Tippoo Sultan, translated from an Original Persian MSS.
The Classical Museum, No. VII.
The Annals and Magazine of Natural History, April, 1845.
Journal Des Savans, November and December, 1844.
Illustrations of Indian Ornithology.—By T. C. Jerdon, Esq.
The Asiatic Journal and Monthly Register, for the years 1841, 42, 43, 44, and the first No. of 1845.
Map of the Kuree Vesetra.—By Lichashahaba.

Read the following letter accompanying the very valuable and curious work to which it refers :—

No. 413.

FROM J. THORNTON, ESQ. *Secretary to Government N. W. P.*
To the Secretary, Asiatic Society Calcutta, dated Agra, 21st April, 1845.

GENL. DEPT. N. W. P.

SIR,—I am directed to transmit to you, for the Society's use, a printed copy of Supplementary Glossary of Indian Terms prepared by Mr. H. M. Elliot, Secretary to the Sudder Board of Revenue N. W. P.

J. THORNTON,
Agra, 21st April, 1845. *Secretary to Government N. W. P.*

Read the following letter accompanying the paper to which it refers which was handed to the Editors of the Journal for publication :—

(No. 1353, of 1845.)

FROM F. CURRIE, ESQ. *Secretary to the Government of India.*
To the Secretary to the Asiatic Society, dated Fort William, the 9th May, 1845.

FOREIGN DEPT.

SIR,—In continuation of my letter to your address, No. 1289, dated the 2nd instant, I am directed by the Governor General in Council to transmit, for such notice as the Society may deem it to merit, the accompanying copy of a report by Lieutenant Dalton, of the traffic carried on with the tribes of Meris and Abors, and some information of a tribe of hill people called Ankas or Jamaee.

F. CURRIE,
Fort William, the 9th May, 1845. *Secretary to the Government of India.*

Read the following letters relative to a Gold Medal of H. I. M. the Emperor of Russia, presented by him to the Society which was on the table:

To the Right Hon'ble Sir Henry Hardinge, G. C. B.

&c. &c. &c.

Sir,—I have the honor to transmit to you, with a request that you will have the goodness to direct them to be safely delivered, a letter and a box containing a gold medal which have been addressed to the Asiatic Society of Bengal, by command of the Emperor of Russia.

I have the honor to be, Sir,
Your most obdt. Servant,
(Signed,) Ripon.

India House, March 29, 1845.

A la Société Asiatique du Bengale.

J'ai eu l'honneur de porter á la connaissance de Sa Majesté Impériale l'hommage fait par la Société Asiatique du Bengale de ses principales publications concernant les litteratures Arabe, Sanserite et Tibétaine.

L'Empereur mon auguste Maitre, ayant daigné agréer avec bonté l'offre de l'association savante, m'a ordonné de lui transmettre l'expression de sa haute bienveillance ; en temoignage de laquelle Sa Majesté a daigné conférer a la Société Asiatique du Bengale une grande medaille en ôr á l'effigie de Sa Majesté.

Je viens de recevoir par l'entremise de la maison de commerce du Baron Stieglitz, une caisse contenant un seul exemplaire des publications sus mentionnees et je m'empresse de m'acquitter de l'ordre Supréme, en transmettant ci-joint a la Société Asiatique du Bengale, la medaille en ôr, que Sa Majesté a bien voulu lui accorder.

En joignant a cette office un exemplaire des principaux ouvrages, portés sur la liste ci-apres, du domaine de la littérature orientale, qui ont paru en Russie, je me félicite d'avoir été l'orgâne des rapports littéraires entre la Société Asiatique du Bengale et l'Empire de Russie.

(Signed,)
Ouvaroff,
Le Ministre de l'instruction publique.

St. Petersbourg, ce 25 *October*, 1844, 7*th Novembre.*

Liste des ouvrages destinés a la Société Asiatique du Bengale.

1. Der Weise und der Thor. Aus dem Tibetischen übersetzt und mit dem Originaltexte herausgegeben von T. J. Schmidt, St. Petersburg, 1843, 1 vol.

2. Die Thaten Bogda Gasser Chan's, des Vertilgers der Wurzel der zehn Übel in den zehn Gegenden. Ans dem Mongolischen übersetzt von T. J. Schmidt, St. Petersburg, 1839, 1 vol.

3. Idem. Traduction russe.

4. Tibetisches Deutsches Wörterbuch von T. J. Schmidt, St. Petersburg, 1841, 1 vol.

5. Dictionnaire Mongol Allemand-russe, public par T. J. Schmidt, St. Petersburg, 1835, 1 vol.

6. Grammatik der mongolischen Sprache, verfasst von T. J. Schmidt, St. Petersburg, 1831, 1 vol.

7. Grammatik der tibetischen Sprache, verfasst von T. J. Schmidt, St. Petersburg, 1839, 1 vol.

8. Ch. M. Fraehnii Recensio numorum Muhamedanorum Academiæ Imp. scient. Petropolitanæ ; inter prima Academiæ Imp. sæcularia edita. Petropoli, 1826, 1 vol.

9. Die Münzen der Chane tom Ulus Dschutschi's order von der goldenen Horde, von Ch. M. von Fraehn, St. Petersburg, 1832, 1 vol.

10. Ibn Feszlan's und anderer Araber Berichte über die Russen älterer Zeit, von C. M. Fraehn, St. Petersburg, 1823, 1 vol.

11. Monographie des monnaies armeniennes, par M. Brosset. St. Petersburg, 1839, 1 vol.

12. Déscription géographique de la Géorgie, par le Tsarevitch Wakhought, publiée d'après l'original autographe par M. Brosset, St. Petersburg, 1842, 1 vol.

13. Catalogue de la bibliothèque d'Edchmiadzin, publiée par M. Brosset, St. Petersburg, 1840, 1 vol.

14. Sammlungen historischer Nachrichten über die Mongolischen Völkerschaften durch. P. S. Pallas, St. Petersburg, 1776, 2 vols.

15. Dictionnaire géorgien russe français, composé par David Tchoubinof, St. Petersburg, 1840, 1 vol.

16. Archiv für Asiatische Litteratur, Geschichte und Sprachkunde, verfasst von Julius von Klaproth, St. Petersburg, 1810, 1 vol.

17. Chrestomathie mongole, publieé par T. Kovaleffsky, Casan, 1836, 2 vols.

18. Chrestomathie mongole, publieé par A. Popoff, Casan, 1836, 1 vol.

19. Chrestomathie persane, publieé par A. Boldyreff, Moscou, 1833, 2 vols.

20. Grammaire de la langue turco-tatare, publieé par le Prof. Kasim. Bek. Casan, 1839, 1 vol.

21. Dictionnaire arménien russe, publieé par A. Houdobacheff, Moscou, 1838, 2 vols.

22. Asseb. O. Seyar on sept planètes ; Histoire des Chans de la Crimée ; Ouvrage de Seid Muhammed Risa, Casan, 1832, 1 vol.

23. Recueil de maximes, priéres, fables, etc, traduites en langue mongole, Casan, 1841, 1 vol.

24. Arithmétique en langue mongole, publiée par A. Popoff, Casan, 1837, 1 vol.

25. Grammaire chinoise, composée par le pére Hyacynthe, St. Petersburg, 1838, 1 vol.

26. Ghata Karparam, par P. Petroff, Casan, 1844.

27. San. Tsi. Tsin, traduit du Chinois par le pére Hyacynthe, St. Petersburg, 1829, 1 vol.

(Signed,) K. KOMOSKEY,
Directeur de le Chamberie du Ministre.

The Secretary was requested to convey to the Russian Minister of Public Instruction, and to request him to express to His Imperial Master, the expression of the Society's most respectful thanks for the high honour conferred on it ; as also for the very valuable additions to the library comprised in H. I. M. donation.

Read the following letter from Major Leech, C. B. Acting Secretary to the Governor General, N. W. P.

H. Torrens, Esq. *V. P. and Secretary, Asiatic Society.*

My dear Sir,—With reference to my letter to your address of the 14th of February last, and to your reply of the 2d of last March, erroneously addressed to Mr. Cust, I have now the pleasure to transmit to you the commencement (10 times as much will follow) of the manuscript Sanscrit to accompany the Maps of the Kuruk Ghetr which I dispatched by banghy dawk on the 26th ultimo.

I am much flattered to find that my undertaking is highly interesting to the Society, and was also so last cold weather by the great interest the Lieutenant-Governor of Agra did me the honor to express in the same.

Wherever I have been stationed I have felt that I owed it as a duty to the literary public, as well as to Government, to enquire as much as my leisure moments would permit, into the language, religious customs, and ancient history of the people I have been placed among.

Judging from the interest felt in my undertaking in this neighbourhood where the people are familiarized with the scene, I am led to believe that there is not a Native (Hindoo) Court or seat of learning, or possessors of a copy of the Mahabharut in India, at which and to whom a copy of the maps at least would not be a most valuable and highly prized acquisition, while to your learned correspondents in Europe you flatter me by saying it would not be wholly unacceptable.

I anticipate its being said by a few, and I hope a very few, that the publication of such documents is a prostitution of the press, an offering to Hindoo Idols. But by far the greater numbers will regard it in its true light, as an illustration of the Ancient Geography of one of the most classic spots in India, tending to create or increase a taste for printing and lithographing among the Natives. And perchance, by making the district of Uglhul the more frequent resort of men of rank, tend to a prosperity to which it has for so many years before lapsing to the British Government been a stranger.

I am indebted to my friend Captain Abbott, who succeeded me in charge of the district of Uglhul, for the loan of surveying instruments, and of his valuable map of the district, and to the Rajahs of Pateala and Jheend, and the Surdurnca of Thanesur for their ready permission to survey such part of their territories as came within the Kuruk Ghetr.

You will perceive in this instance, as in others that have come under the notice of the Society (Journals of Natives employed by me in travelling across the Indus published by them) that I have not, as is too often the fashion, robbed the real though humble labourer of his hire, but have made the Pundit of the small Ambalah School, Jwaharlal, enter his name as the compiler of the present manuscript. I have made him again enter the name of Dander, from whose Mahatma he has condensed most of his Urdu.

Labour I have had none. Expense I have incurred little, perhaps not more than 200 rupees. I was alone fortunate in the undertaking suggesting itself to me.

I have in preparation a Persian map and a Persian Mahatma, comprising the local legends, undertaken at the request of most of the chiefs with whom I am acquainted in these parts.

I cannot here refrain from calling attention to a little mistake or two made by the immaculate authority as to the history and country of the Seikhs, who writes in the Calcutta

Review, page 156, (the Seikhs and their country.) " The word Kora-Chetre denotes the field of Kora, the opponent of the Pandus."

" With Thanesur nearly as the centre of the country around in a radius of twenty miles is holy ground, and every ghat on the Saraswati, and nearly every tank within that area is a Teeruth, a place of pilgrimage."

The words " opponent and centre" are of course the *trifling* mistakes I allude to.

Should there be a difficulty in lithographing the Teeruths in red letters it will not signify their being black with the rest.

By this day's banghy dawk I have despatched a drawing of a Prathanea found at Bhyn Jahsh some years back, which ought to be reduced to quarter its present size to bear binding in the account of that Teeruth.

I have to apologize for the execution of the map. Having had no time myself to devote to it. I have been obliged to entrust it to a very indifferent Native draughtsman, but still the best procurable, of its correctness notwithstanding I am well satisfied.

The border of the map which is very incorrectly drawn being taken from the Prathanea is suitably antique.

I shall be happy to publish the map and account myself on ascertaining the probable expense through your kind assistance, should the Society, from the fact of their not being in English, consider them unadapted to the Journal or the Researches, or I shall be happy to see them put into any other shape or language under the auspicies of the Society by any one having the necessary leisure which I have not.

Your's very truly,
(Signed,)

Ambalah, 3d June, 1845.

Read the following letter from the Archæological Society :—

The Secretary of the Asiatic Society, Calcutta.

SIR,—I am directed by the President and Council of the Society of Antiquaries of London, to forward to you the following publications, for the use of the Asiatic Society, Calcutta, viz.

Archæologia, Vol. XXX.
Index to ditto, from Vol. XVI. to Vol. XXX.

Somerset Place, 29th Nov. 1844. NICH. CARLISLE,
Secretary.

Read the following letter :—

To H. TORRENS, ESQ. *Vice President and Secretary, Asiatic Society.*

SIR,—I have the pleasure to forward the accompanying (7) seven volumes, being the only works in Sanskrit in the Calcutta School Book Society's Depository. I regret that our stores should furnish so meagre a supply, but works in the Sanskrit language are so little called for that the Society have not considered it worth while to enlarge their selection at present.

The amount of the books is 8 Rs. 9 an. ; which you can either pay now, or allow to stand over to some future time, as most convenient to yourself.

C. S. B. S. Library, May 23, 1845, J. SYKES,
Sec. C. S. B. S.

Resolved that, pending Messrs. König's final orders the bills be allowed to stand over, as kindly offered by the School Book Society.

Read a letter to the Sub-Secretary from the Rev. J. J. Moore, Secy. Agra School Society, acknowledging the receipt of the copy of the Rekha Ganita made here for him* (See proceedings April, 1844) and inclosing a draft for the amount :—

Read a memorandum from the Sub-Secretary noticing that Dr. Campbell, of Darjeeling, had obliged the Society with 44 old numbers of the Journal.

Read the following note relative to the model of the Gun "Zubberjung :"—

My Dear Sir,—Some time ago a model of the celebrated "Zubberjung" Gun, which was burst on the return of the army from Afghanistan, was sent to the museum of the Asiatic Society by mistake. It should have been forwarded to Mr. Curnin of the Mint, and since I have been apprized of the error, will you kindly do me the favor to make it over to the bearer, and I will agreeably to Colonel Stacy's instructions, send it on to Mr. Curnin.

Believe me, your's sincerely,

Ballygunge, May 21st, 1845. Robt. Wroughton.

And the Secretary stated that in returning the model he has requested Major Wroughton to oblige the Society with a cast also, on paying for the expense, which he had kindly promised to procure for it.

Read the following letter from Captain Russell, H. C. Steamer Ganges relative to the presentation to which it alludes :—

Henry Torrens, Esq., *Secretary to the Asiatic Society.*

Dear Sir,—On my last trip in the H. C. Steamer Ganges to the Nicobar Islands, I found a curious custom existing amongst the Natives of preserving the bones of their chiefs or principal persons. At Lalone, a village in the N. E. side of the island of Theresa, at the place where the brig or schooner Mary was cut off in either May, June, or July, 1844, Captain Ventura and his crew were all murdered, and the vessel burnt, part of her rigging and stores were found in the houses, the natives having fled to the jungles. Close to this village under a tree were several, say 15 or 16, of the bones of these persons dressed up as you will find by the specimen, which Captain Patterson has the kindness to take up to you from me, which I request you will present to the Asiatic Society.

On enquiry I find that from three to four months after being buried, the bones are carefully taken up, and dried, afterwards at their feasts carried about to every house by the young girls, and then placed under a tree with cocoanuts, yams, &c. laid near them. Trusting this may be deemed acceptable to your Society.

Moulmain, 14th May, 1845. J. Russell,

Commander H. C. Steamer "Ganges."

* But we have not been able to obtain one with the diagrams. We should be obliged to any friend who could indicate to us where a copy exists with the diagrams.—Eds.

Read the following letter in Persian accompanying the work to which it alludes :—

غریب پرور عالمیان وقدردان عالمان ولی النعمت دام اقباله

بعد عرض میرساند

که روزی بتقریبي فیمابین فدوی و مولوي مظهر علي صاحب مذاکرهٔ صاحبان عالیشان امثال اگستس بروک صاحب و غیرهم که اخیار زمان و محض مجبول و مخلوق بنفع رساني و قدرداني ورتبه شناسي هر اشخاص علي حسب حال بودند بمیان آمده برفقدان همچنان رئیسان وحکام ذي شان تاسف وقلق ها بوده اندرینصورت نیاز کیش بذکر اوصاف جزیله و اخلاق جمیله وصفات کریمهٔ آن ولی النعمت که اوتعالی وتقدس شانه عطا فرموده است پرداخته تلخي قلق ایشان را بشیریني سرور موفور وحبور نامحصور مبدل ساخت ومحرك تصنیف این رساله بنام نامي جناب خدایگاني گشت واز جناب احدیت مستدعي بودم که عندالملازمت باسعادت مولویصاحب مسبوق بالمدح بوفور عنایات واخلاق آنوالا جاهي چنانکه بیان کرده ام بهره مند شوند تا بر وقوع خلاف بیان خجالت نبرم الحمدلله ثم الحمد لله ثم الحمدلله که ایشان از قدرداني ومردم شناسي خدایگاني خیلی مسرور ومشغوف گشتند حتی که اگر بالفرض درین شهر با بي علاقگي تامدت دراز طرح اقامت اندازند و گاه گاه بشرف ملازمت کیمیا خاصیت آن والا جاهی بهره اندوز شوند اصلا وهرگز لب را بشکایت زمانه آشنا نسازند و چون نیاز مند بجا آوري امور متعلقه خود را گو کسی داند یا نداند دهندهٔ روزي میداند برخود من قبیل واجبات می انگارد لهذا بعد عرصه دراز اتفاق تقبیل عتبه سنیه میشود فاما درصورت ارادهٔ استحصال این سعادت یعنی ملازمت جنابعالي کار روز آینده از پیشتر بمقداری که مساوي کار هر روزه باشد انجام نموده برای سلام آن ولی النعمت حاضر میشوم باقي مراتب عرض کردني محول حامل این عریضه است زیاده حد ادب

یکم ماه اپریل سنه ۱۸۴۵ ع

ع———————رضي

فدوي عبدالوهاب متوسل بندگان عالي

The Secretary was desired to write to the author, expressing in the name of the Society its high approbation of the work, and especially as regards the introduction of the Copernican system into it.

Report of the Curator Museum of Economic Geology, and Geological and Mineralogical Departments, for the month of May.

Geological and Mineralogical.

Lieutenant Sherwill, whose beautiful Geological map and collection of specimens of Zillah Behar was brought before the Society in January has at my request, added to it.—I may say he has doubled its value—by giving us first a note of the heights of forty-two points measured or estimated, and then a general geological memorandum of the district. He has further, and this is not mere ornament, added to the map a set of vignettes most capitally executed, and admirably chosen to convey a faithful idea of that district.

From the whole we shall, I doubt not, be able to give as good a preliminary geological idea of the district as can be desired, or indeed expected, for nothing short of a geological survey can of course produce a correct one.

We have also received Captain Phayre's sketch map to accompany the series of specimens from Sandoway to the top of the Yoma mountains exhibited at the last meeting. The map had been left on board the H. C. S. Amherst.

Lieutenant Strover has forwarded to us, at the request of Captain Abbott, some specimens illustrative of his paper on the occurrence of granite in the bed of the Nerbudda. Lieutenant Strover says,

My dear Sir,—In a letter I received from Captain Abbott, he mentions that some specimens of trap blended with granite found in the bed of the Nerbudda here would be acceptable to the Society. I therefore, without delay, despatch them by Banghy Dawk franked by the political officer here ; I have sent five different packets, viz., 1st the trap, 2nd granite, 3rd the granite and trap where the former preponderates, 4th where the latter is in excess, 5th indistinct blending of the two. Should the society require other specimens or layer, I shall be happy to meet with their wishes.

Museum of Economic Geology.

We have received from Captain Ousely a good supply of the Agalmatolite which as mentioned in my last report, we had recognised Major Williams' *Samy stone* to be ; and some of it really proves to be a very fine variety, almost approaching the Pagodite.

A box of 8 or 10 lbs. weight has been sent, in the name of the Society, to Major Williams' brother, with a request that he would inform us of the success of it as a polishing material, for which, and as an anti-attrition one also, it seems admirably adapted.

I shall also endeavour to have trials made of it soon; the different varieties we have received, I have distinguished as follows in our collection and to Mr. Williams:

A. Large block, light greenish-white fracture, talcky in some parts; the weathered surface yellowish.

B. Sawn piece ; whitish, slaty grey where cut ; on the fractured surface green, grain finer and even.

C. Thinly laminated, and contorted. Impure between the laminations.

D. Thick laminated and contorted, perhaps a harder kind.

Major General Cullen has forwarded to us from Trevandrum two specimens of Graphite. This graphite is of the soft, loose scaly kind which would evidently not serve for pencils, and for inferior uses it is probably too cheap at home to render it worth shipping. Nevertheless a few maunds might be tried since its collection and package would be made at a trifling expense.

General Cullen says—for though not writing for publication I cannot do better than borrow his words:

Cochin, 3rd March, 1845.

"I send you by a vessel bound for Calcutta some specimens of what I suppose to be *Graphite* which I lately discovered near Trevandrum in Travancore. You may perhaps have observed in a late No. (30) of the Madras Journal of Science a slight notice of the discovery by me of this mineral in Tinnevelly as well as Travancore? At first the indications of it were trifling, consisting merely of small scales or sometimes of thin plates about the size of a dollar disseminated in the *Limestone* or *Gneiss* of Tinnevelly or the Gneiss or Laterite of Travancore. Subsequent researches have proved to me that it is not only very generally (widely) distributed, but that it is not improbable it may be found in such abundance and purity as to render it an article of commerce.

I have procured some specimens of very fine sorts, in lumps about the size of a small egg, from pits in a Kunkur deposit at Tinnevelly, but I have not yet been able to visit and examine the spot carefully. The lumps, however, seem to consist of scales or lamina rather closely aggregated, but not so much so as to admit of leads being cut out of them fit for pencils, it is also exceedingly flexible or soft.

Perhaps, however, at a great depth or incumbent pressure its solidity may be greater.

Small scales or plates of graphite are also exceedingly common in Travancore, particularly south of Trevandrum, but I have found traces of it as far north even as Cochin.

The variety of graphite which I have sent you by sea was discovered in my search for finer specimens of the laminar kind. I learnt that the potters of Trevandrum occasionally, at the great festivals, blackened their earthen vessels with a mineral which was supposed to be plumbago.

I visited the spot, which was 5 or 6 miles from Trevandum, on the slope of a gneiss hill, the lower portions of which were overlaid with laterite; or rather the gneiss rock was there decomposed into laterite, to a certain depth from the surface; small lumps of laterite containing the plumbago were lying about on the surface, there was no regular workings, but I opened the soil or laterite in the bed of a water course for a distance of about 40 or 50 feet, and found a regular stratum or vein of the mineral more or less rich; imbedded and lying parallel to the strata of laterite as the specimens now sent. It appeared to become rich as we went deeper. I brought away some hundred pounds of the mixed ore or laterite. It has not yet been turned to any account.

Its fibrous appearance only excepted, or rather its granular texture and its application to pottery, made me suppose at first that it might be an ore of antimony, nor does it soil so strongly as the laminar varieties. The fibrous varieties are very like specimens which I have of the Ceylon graphite; the geological relation to the deposit in Ceylon will be interesting.

You are aware probably of the singular carbonaceous deposits in the south of Travancore, have these a connection with the occurrence of the Graphite? probably not. These carbonaceous or lignite beds are chiefly immediately on the coast between Quilon and Trevandrum, but they are found also 30 miles south of Trevandrum, and also in Malabar near Calicut, as noticed by Captain Newbold."

Col. Ousely has forwarded through Mr. Secretary Halliday a fine set of specimens of the Galena of Hisato, which will be I hope more fully reported on at our next meeting.

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